ELEMENTARY HOME ECONOMICS

COOKERY SEWING

CARE OF THE HOUSE

Marjorie Kathleen Shaw
8 B - 2

ELEMENTARY HOME ECONOMICS

MEASURING TO FIND THE AMOUNT OF MATERIAL NEEDED FOR THE NIGHTGOWN

ELEMENTARY HOME ECONOMICS

FIRST LESSONS IN CLOTHING AND TEXTILES, FOODS AND COOKERY, FAMILY RELATIONSHIPS, THE CARE AND MANAGEMENT OF THE HOUSE, THE CARE OF CHILDREN, HOME NURSING AND HEALTH

REVISED EDITION

BY

MARY LOCKWOOD MATTHEWS, B.S.

PROFESSOR OF HOME ECONOMICS AND DEAN OF THE SCHOOL OF HOME ECONOMICS IN PURDUE UNIVERSITY

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PREFACE

This volume is intended for use in classes beginning the study of Home Economics in schools where one book is desired to cover the entire course. It is strictly an elementary treatment of the subject and presupposes little training in general science.

While the book is divided into two parts — namely, Foods and Cookery, and Clothing and Textiles — yet it embraces such topics as Family Relationships, House Decoration and Furnishing, the Care of the House, Budget and Accounts, the Care of Children, and Home Nursing. These subjects are correlated so that the student sees the relationships between the different phases of housekeeping and home-making — a plan which it seems desirable to follow in elementary courses in Home Economics.

Through the "Home Problems and Questions" it is hoped that there may be a correlation between the home and school work and that there may be developed in the student an incentive to obtain information for herself on subjects not discussed in the book.

While there are a number of elementary textbooks in Home Economics, there seems to be a need for one dealing with more than one phase of the subject as it is now taught in the elementary or junior high schools.

The author appreciates the assistance given in illustrating the book by the United States Department of

Agriculture, the United States Bureau of Standards, the United States Bureau of Education, the Detroit Stove Works, Cheney Brothers, the Linen Thread Company, Landers, Frary and Clark, the Chambers Manufacturing Company, the *Woman's Home Companion*, the Curtis Publishing Company, the *Pictorial Review*, the Trinity Court Studios, the Department of Agricultural Extension of Purdue University, the Armstrong Cork Company, the Willowcraft Shops, the Household Refrigeration Bureau of the National Association of Ice Industries, and the Minneapolis public schools. The author also gratefully acknowledges the criticisms and suggestions of educators who kindly read the manuscript.

M. L. M.

June 1, 1926.

TO THE STUDENT

HAVE you thought about what you will do when you finish school?

Perhaps you have decided to be a teacher, a librarian, a stenographer, a doctor, a nurse. Perhaps you are making plans to take a course in high school or college that will fit you for one of these callings; you would not consider yourself capable of entering any of them without training.

Very probably you will be at some time the manager of a home. Have you thought about the importance of being trained for home-making?

It is only within the past twenty-five years that it has been considered needful for the public schools to train girls for the work which most of them will do for the longest period in their lives, the work of home-making.

Mrs. Ellen H. Richards was the first to say that the schools ought to teach "right living"; and, largely through her efforts and her inspiration, plans have been worked out whereby girls while in school can be taught many things about right living.

Right living begins with the home. Who makes the home? The man may furnish the money to build and maintain the house, but it is the woman who plans and manages the home. It is her business to see that the family lives in a sanitary and an attractive house;

that every member of the family has clean, properly selected and well-cooked food, and that every one is suitably clothed; that the family income is wisely spent; and that all in the home are helped to lead a happy and useful life.

No girl should consider the making and managing of a home an easy piece of work, for in fact nothing is harder to do and to do well.

When the girl takes work in school and college that covers all phases of home-making, we say that she is taking a course in Home Economics.

SUGGESTIONS

When planning a course in Home Economics for any school it is essential that the teacher should know from what kinds of homes the students come; what is the average income of the families of these girls; what nationalities they represent; what is the social life of the neighborhood. It is impracticable to follow any textbook, page by page, without first knowing whether the lesson-plans suit the students to whom they are presented. When the teacher knows the neighborhood, she can wisely select and arrange the parts of the book to be assigned.

In many cases the recipes outlined in this book should be changed; and in no case should they be used as presented when the teacher has recipes which she has tested and knows to be good, and which may be used to illustrate the principle that is under discussion.

The Foods and Cookery lessons are outlined on the meal basis, making the meal the project, while the lessons on various foods are the problems to be studied before the project is completed. It is desirable that the laboratory equipment should include dining-room equipment; but, when that is not available, serving the meal on a supply-table or at the individual desks may be the plan used. In any case the girls should be urged to try the work at home, making reports on the work done.

The lessons in Clothing and Textiles are planned with the garment as the project, with many problems to be studied which lead to its completion. It is advisable always to

have a plain practical garment as the project rather than an elaborate one involving a great deal of hand-work.

The school laboratories should be equipped with sewing-machines.

The book is divided into sections instead of lessons, thus giving the teacher the opportunity to use as much or as little as is desired at any one time, since the amount of time allowed for Home Economics varies greatly in different schools.

The "Home Problems and Questions" may furnish material for lessons if plenty of time is allotted to this course, or may be used only as work to be done outside of class hours.

Illustrations and exhibit material that can be secured from various manufacturing concerns or elsewhere will help to make the work much more interesting to the student. Charts dealing with various subjects will be sent free by many firms. Having the students make posters illustrating various lessons will create interest. Lantern slides can be secured from some concerns and should be used when possible.

In addition to the reference-books that should be found in the school library, there are bulletins which are very valuable as reference material. Write to the following addresses and ask that publications be sent to you and your name put on their permanent mailing list:

Division of Home Economics, Bureau of Education, Washington, D. C.; Children's Bureau, Department of Labor, Washington, D. C.; Department of Agriculture, Washington, D. C. (also ask for lists giving names of Farmers' Bulletins); Bureau of Home Economics, United States Department of Agriculture; United States Public Health Service, Treasury Department, Washington, D. C.; Federal Board for Vocational Education, Washington, D. C.; all State Universities and Agricultural Colleges; American Home Economics Association, 1211 Cathedral St., Baltimore, Md., publisher of the *Journal of Home Economics* ($2.50 per year).

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PART I

FOODS AND COOKERY
THE CARE OF THE HOUSE
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CARE OF CHILDREN
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ELEMENTARY HOME ECONOMICS

THE HOME AND THE FAMILY

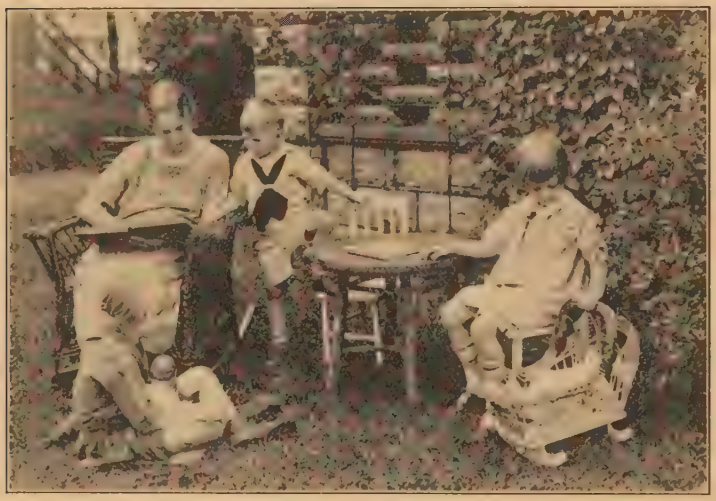
A HOUSE becomes a home when it is a happy, restful, and inspiring place in which to live; when it is equipped and managed in such a way that the family leads a healthful, useful existence; when children can be reared in the best kind of surroundings, with intelligent care, and when the members of the family can take their share of responsibility in community affairs.

A family consists of the father, mother, sons, daughters, and perhaps grandparents, aunts, uncles, and cousins. Each member of the family should do his or her share in making the home; it is not right to place all the responsibility on mother and perhaps on father. Grandparents, uncles, and aunts can help; each son and each daughter should do his or her share.

What share can the daughter take in making the home? She will probably become a home-maker herself some day, and during her girlhood she should be trained in the home-making duties.

First, it is necessary that the girl should have the right personal qualifications for home-making. One of the most important is good health; no woman can do her share of the world's work when she is not strong, when she is irritable or nervous. A girl should learn how to take care of her health through wearing comfortable clothing, eating properly planned meals, sleeping, resting, and exercising in proper amounts. She

should have a happy disposition and poise, should be sympathetic and patient with others, generous, and always willing to do her part. She should be neat and careful of her personal appearance; no home-maker is attractive when she goes about the house with her hair uncombed or wearing dirty or inappropriate clothing.



A Happy Family

Mother is reading a story to the children and little brother is much interested in the pictures

The good home-maker organizes her work so that each person in the household has certain tasks to perform. If the mother in the home does the housekeeping, the daughters should do their share willingly, helping with the meals, caring for their bedrooms, dusting, helping in the care of small children, and assisting with the mending, sewing, or any other tasks which are a part of the housekeeping schedule.

The daughter of the house should do the work in-

volved in getting ready for a party when she is entertaining her friends in her home. The thoughtful daughter never allows her mother to do any part of the work that she can perform.

The members of a family should be helpful, loyal, kind, considerate, and polite to each other. It is just as important to be polite to members of one's family as to people outside the home. A quarrelsome family is not found in the best type of home.

The family should be companionable, should enjoy each other, and should be helpful to each other. Each member should be interested in the things that interest others in the family. Sisters should be intelligent about the things that interest their brothers, brothers in the things that interest their sisters, the young people in affairs of interest to their parents. A family should enjoy being together and should find pleasure in doing things together. It should not be necessary for boys and girls to go away from home to have a good time with other people.

The family as a whole should know about the neighborhood activities, interests, and needs, and should be willing to assist with community movements. A community can be improved only when the people in it desire to see things changed and when they are willing to use time and effort in helping to better conditions. Owning one's own home makes one more interested in seeing a community improve; however, when one rents a home it is desirable that the family should take their share in community activities. Even when living in an apartment one may assume some part in community affairs.

"A community is as good as its individual homes." Through the efforts of a family the individual home is developed either successfully or unsuccessfully; the

community is made up of these homes and becomes either a desirable or an undesirable neighborhood. It should be the wish of every girl to help to create the right kind of home.

HOME PROBLEMS AND QUESTIONS

Make a list of all the things your mother does which help to make your home a happy place in which to live. What do you do to help? How can your father and brothers help in making a happy home? Suggest ways for the family to spend their leisure time together during an evening at home. Suggest other ways to spend this time together outside the home.

Make a list of books that could be read aloud together. Have you ever read any books which describe the homes of Colonial days? Perhaps some one can tell you how the homes of Civil War days differ from those of to-day.

What could be done to make your community a better place in which to live? Ask your mother and father about this. If there are any public playgrounds or parks or a community building in your community, find out how these are supported. Who pays for the schools?

In what ways can you help in improving your community?

LABORATORY EXERCISES

DIRECTIONS FOR WORK IN LABORATORY

Personal appearance: 1. A wash dress is always to be preferred in the school laboratory or home kitchen.

2. White aprons should be worn in the cooking laboratory. There are several types that may be used.

3. Holders for lifting hot dishes, and individual hand towels, should always be used by every student. With bobbed hair, a cap or headband should always be worn.

4. The hair should be brushed back and fastened so that it does not fall in the face. If white caps are worn they should be pulled down to cover the front of the hair.

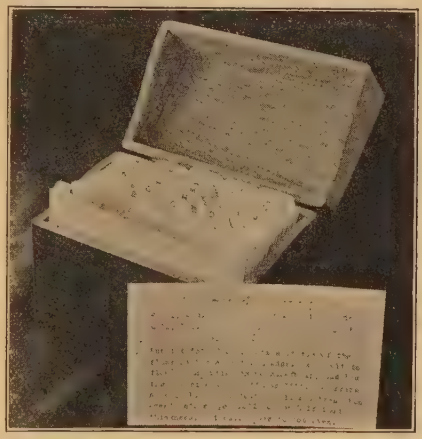
5. The hands should be thoroughly washed and the nails scrubbed with a brush and cleaned thoroughly before you begin any cooking. When cooking, wash your hands whenever they become sticky or soiled.

6. Do not wear rings, bracelets, or other jewelry in the kitchen.

Directions for work should include: Assignment to desks.

Checking equipment.

Discussion of rules regarding care of towels, desks, implements, etc.



Card File Cook Book

One card used for each recipe. Card may be hung in a convenient place when recipe is being used

Explanation of the kind of notebooks, reference books, or textbooks required.

Explanation of the method of using a card file for recipes. Each student should begin one. Why is it also desirable to have cook books for reference? Make a list of cook books which are "standard" (used very generally). From what other sources may one obtain recipes?

THE HOUSE

People in the United States like to live in comfortable houses and we build the best arranged and equipped houses of any nation in the world. In the high schools and colleges courses are given in House

Planning and Furnishing for the purpose of making as many young women as possible familiar with the rules underlying the planning and furnishing of a comfortable house. The house which is well planned is an easier one in which to do housekeeping, and for this reason, if for no other, it is worth while to study this subject before building a house or selecting one to rent or buy. A house, to be comfortable, should be convenient, sanitary, and beautiful.

A house which is convenient: (1) has rooms which are compactly arranged and connected; (2) has rooms that are large enough but not larger than needed; (3) has only rooms enough to supply the space needed by the family; (4) has each room planned so that the furniture can be arranged in it correctly; (5) has walls, floors, and furnishings that can be easily cleaned; (6) has plenty of closets and cupboards for storage space.

A house is a healthful place in which to live when: (1) it has plenty of windows and doors to furnish light and air; (2) when its working surfaces are at a height which prevent stooping at work; (3) when all equipment is arranged to prevent unnecessary walking and standing; (4) when there are enough bedrooms so that not more than two people need to sleep in any room; (5) when good artificial lighting is provided; (6) when the interior of the house is so finished that it can be kept clean; (7) when the plumbing and heating systems are correctly installed.

A house that is beautiful has (1) artistically finished and decorated walls and floors; (2) window draperies that harmonize with the walls and furnishings; (3) furnishings that are appropriate to type, size, and kind of house; (4) the building as a whole well designed, and suited to the locality.

Before selecting or making the plans for a house, or before renting one, a study should be made of the rules governing house-planning and furnishing, of art, sanitation, and hygiene. One should observe the houses of other people to see what features are desirable.

To-day houses are smaller because the cost of building is so great, and because women have found that they do not need unused rooms in their houses and that many rooms are more convenient when not so large. To economize space, sometimes one room is used for both living and dining room, or there may be a breakfast nook instead of a dining room; in-a-door beds may fold or slip into closets or other spaces when not in use, thus making it possible to use the room for a living room or for other purposes during the day, and as a bedroom at night; pantries and entrance halls have been left out of many small houses. The rooms in some bungalows and apartments are too small to be convenient, and this fault should be watched for in selecting a house or a house plan.

Walls finished in oil paint and hardwood floors, simply designed furniture without much upholstery, draperies that can be cleaned easily, little bric-a-brac, no unnecessary furnishings, all help to make a house an easy one to keep clean and in order.

LABORATORY EXERCISES

MEASUREMENTS

Careful measuring or weighing of the ingredients used in a recipe is very necessary if the results are to be of the best. The utensils commonly used for measuring foods are: scales, measuring-cup, measuring-spoons, tablespoons, and teaspoons. In measuring dry materials, fill the measure and level off the top with a knife. When one half teaspoon is desired, divide

the material lengthwise of the spoon and scrape out one half. For one fourth teaspoon divide crosswise the remaining half.

KITCHEN EQUIPMENT

DOUBLE-BOILER, VEGETABLE PRESS, SCALES, OVEN AND CHEMICAL THERMOMETERS, MEASURING-CUPS, SPATULA, WOODEN SPOON AND BREAD RACK

Experiment:

Use water for the following:

1. To find the number of teaspoons in one tablespoon.
2. To find the number of tablespoons in one cup.
3. To find the number of cups in one pint.

Use sugar for the following:

1. To find the number of tablespoons in one cup.
2. To find the number of cups in one pound.

Use flour for the following:

1. Fill the cup by dipping it into the flour; weigh.
2. Fill the cup by using a spoon; weigh.
3. Sift the flour, fill the cup by using a spoon; weigh.

Use salt for the following:

1. Measure one half, one fourth, and one eighth teaspoon.

Discuss ways in which oranges may be served for breakfast. Prepare them in several of the ways sug-

gested. The following are common methods of preparing oranges:

1. Wash the orange, cut through crosswise, serve on plate.
2. Wash the orange, remove the skin and as much of the white portion as possible, divide in sections, arrange attractively on plate, serve.
3. Wash the orange, cut in halves, squeeze out the juice, using the lemon-squeezer; put juice in glass, cool, set on fruit-plate, serve.

THE KITCHEN

The rooms in a house are divided into the sleeping rooms, work rooms, and living rooms. The kitchen is one of the work rooms; it is a workshop where food is cared for, prepared, cooked, and served.

The most convenient kitchen has windows or doors on two sides of the room, so that when these are open a cross draft of air clears the room of smoke and odors.

A kitchen is a pleasant place in which to work when the view from the windows is attractive. Especially is this true in the country, where it is much better to look at the hills, woods, or fields than to look into the barnyard or chicken yard.

The kitchen should be the cleanest room in the house. The most sanitary kitchen has walls finished in material that can be washed, such as oil paint, or tile. Walls and woodwork should be light in color, because this makes the room seem more cheerful and also makes it easy to "see the dirt", which then may be removed.

Tile floors are good in a kitchen, but are expensive. Rubber mats or runners may be placed over the tile floors where workers walk or stand, and rubber heels should be worn on the shoes of those working in such a kitchen, thus preventing the jar to the body which is objectionable. Some composition floors are suitable

for the kitchen. A kitchen floor may be made of hardwood, oiled or waxed, and used without covering; but this is a type of floor requiring a great deal of care.

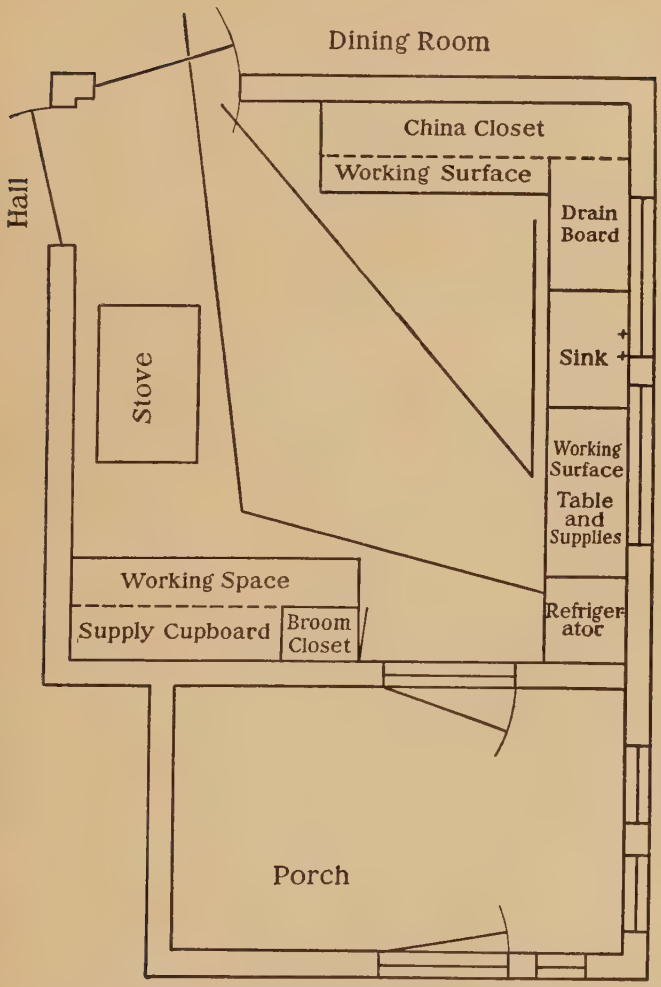
Soft-wood floors may be covered with linoleum or cork carpet, or they may be painted; but the linoleum-covered floor is the best. Inlaid linoleum is preferable

A Convenient Kitchen

With built-in ironing board, refrigerator and work-table

to printed linoleums because it wears better. Any linoleum should be laid so that water cannot get under it. This is done by using a linoleum cement at all the seams and around the edges. Linoleum varnish should be put over the linoleum to protect it from grease and wear. It should usually be varnished twice a year.

The kitchen should have built-in cupboards with plenty of space for utensils. Shelves should be 10 inches, 12 inches, or 14 inches deep, and adjustable, so that they can be made to fit the articles to be kept



"Routing Lines" in a Well Arranged Kitchen

If the refrigerator were built into the wall next to the porch it could be filled from the outside

on them. Cupboard doors are preferably made without glass in them. The shelves and insides of the cupboards should be finished with enamel paint, so that no papers or oilcloth need be used on them. All cupboards should extend to the ceiling or should have the wall built down to their tops, so that there will be no place for dust to collect on top of the cupboards.

The sink, with a drain board at each end, should be set where there is plenty of light, and it should be open underneath to avoid the dampness often found in sink cupboards.

A porcelain sink, with the drain boards, splash board, and sink all in one piece, is the very best type, but because of the expense of such a sink one made of enameled iron of good quality may be substituted. A sink should be high enough so that the worker does not need to stoop when using it.

The kitchen may have a built-in ice-box arranged to be iced from the outside of the house. Electric refrigerators are now used in some homes; they are satisfactory, but expensive. Some kitchens have a dumb-waiter to the basement.

If an ironing board is used in the kitchen, it may be built into a space in the wall, being let down when needed and folded back when not in use. If there is a laundry in the house it is a better plan to put the ironing board there.

Other devices sometimes found in the kitchen are: a closet for cleaning-implements, such as broom, bucket, and brushes; a cupboard for the leaves of the dining-table; and a built-in kitchen cabinet. There may also be a pantry.

Each housekeeper decides for herself how to make the kitchen a well arranged and equipped workshop. In a well arranged kitchen the equipment is so placed

that the housekeeper can use it without losing time or wasting strength in walking.

HOME PROBLEMS AND QUESTIONS

Make a drawing of your home kitchen, showing where the sink, the cupboards, the table, the stove, and other equipment are placed.

Notice with care the steps taken by a person preparing breakfast, and then make dotted lines on your drawing to show where she has walked. Such a line is called a "routing line."

Do you think any of the equipment could be changed to make the kitchen more convenient?

Bring your drawing to school for discussion.

Examine samples of inlaid, printed, and plain linoleum. In what widths can linoleum be purchased? Ask a dealer to explain the method of laying linoleum, using cement.

Make a list of all the makes of kitchen cabinets which you find advertised in magazines or which are sold in the local stores. From what firms may "units" to be built into kitchen walls be purchased?

Is there storage space in the basement of your house? How are the walls finished? How is the space ventilated?

What is an incinerator? How may it be installed in a house?

LABORATORY EXERCISES

STUDY OF STOVES

Experiment:

Examine the stoves to be used in the laboratory. If a gas range:

1. What kinds of ovens are there?
2. Is there a pilot to use when lighting the ovens?

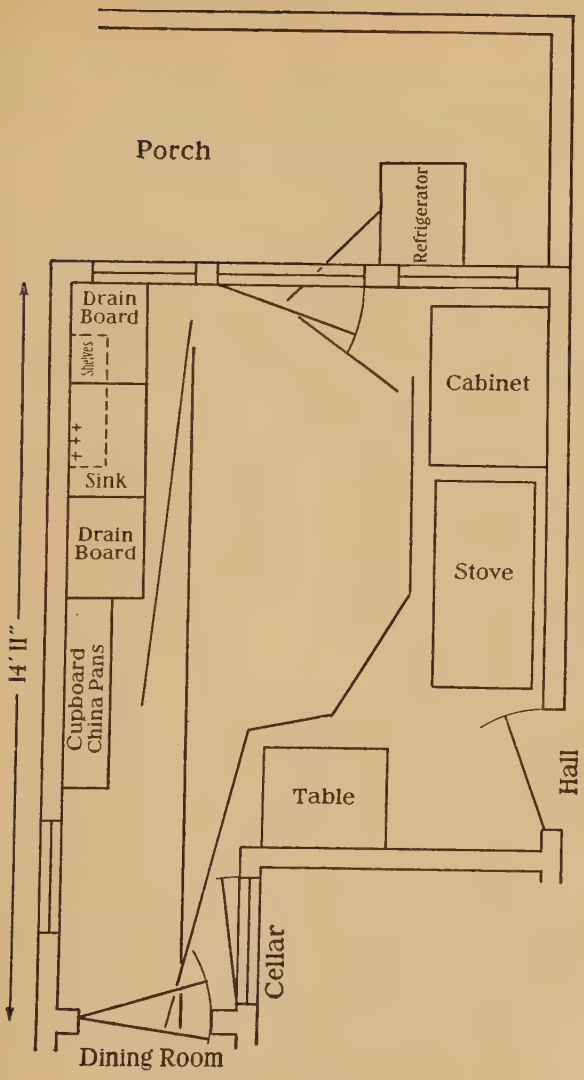
3. Do the oven doors fasten tightly?
4. Does the top burner have a stationary or a movable mixer?
5. If there is a movable mixer, light the gas burner and observe the color of the flame; turn the mixer and observe the flame.
6. What color should the flame be to give the most heat?
7. Place a bright clean kettle, containing a small amount of water, over the yellow flame. What happens to the outside of the kettle?
8. What is the use of the mixer?
9. How is the top burner removed for cleaning?
10. Can other parts be removed for cleaning?
11. Is there a thermostat on the stove? How is it used?

If a coal or wood range:

1. Examine the firebox to see how it is constructed.
2. Where is the ash-pan? How are the ashes removed?
3. Find the dampers on the stove, and determine the use of each.
4. For what is the stovepipe used?
5. How does the heat warm the oven?
6. Lay the fire in the following manner. Clean the firebox and ash-pan, crumple paper and put a generous layer over the bottom of the firebox; place kindling on top of the paper in such a way that the air passes between the pieces; place one large or two small shovelfuls of coal or sticks of stove wood on top of the kindling. How shall the drafts be arranged before the fire is lighted? Clean the top of the stove before lighting the fire.

If an electric range:

1. What kinds of ovens are there?
2. Where are the switches for turning on the heat for the oven?
3. How are the switches adjusted for the right temperature required for the cooking process?



"Routing Lines" in a Kitchen

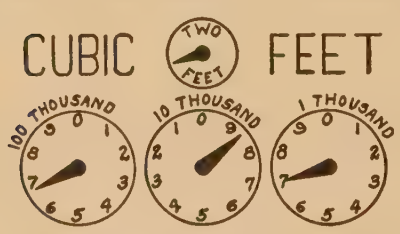
A wheel-tray would be a great convenience in removing dishes from the dining room

4. Use the oven thermometer and see how long it takes to heat the oven to a temperature of 350° F. Compare the time with that required for heating the oven on a gas range to the same temperature.
5. Compare the price of the electric range with that of a gas range of the same type. When would it be economical to use an electric range?

READING GAS AND ELECTRIC METERS

In order to know the cost of the gas and electricity you use in your home, it is necessary to learn to read the gas and electric meters.

To read a gas meter: Gas is measured in cubic feet as it passes through the meter. Look at the gas meter used in your home and you will see the dials arranged as in the drawing shown below. The right-hand dial is marked "one thousand" and means that 1000 cubic feet of gas has passed through the meter during one complete revolution of the hand. The center dial indicates that ten thousand cubic feet has passed through the meter, and the left-hand dial indicates that one hundred thousand feet has passed through. The small dial, usually above the other three dials, measures two cubic feet and is used in testing the meter or when measuring small amounts of gas. When reading the meter, the small dial should not be read.



GAS METER

TOTAL READING OF METER IS 68,700 CUBIC FEET

The two outside dials have their figures running from the right around to the left side of the dial, while the center dial is arranged with the figures running from left to right, and must be read in the opposite direction from the other two. Always use the lower number when the hand points

between two numbers. The reading of the dials in the drawing indicates 68,700 cubic feet.

To determine the amount of gas used since the last reading, subtract the total amount of the last reading from 68,700 and the remainder will indicate the amount used. Practice reading a gas meter.

To read an electric meter: Electricity is measured by the watt hour or kilowatt hour. A kilowatt hour is 1000 watt

ELECTRIC METER

TOTAL READING OF METER IS 0538 KILOWATT HOURS

hours. Electricity is measured by a watt-hour meter, through which the current passes as it enters the house. There are four dials on the face of a watt-hour meter arranged as in the drawing shown above. Which dials are to be read from left to right? Read the left dial first and put down the number which the hand has just passed; then read the next dial; then the third; and then the right-hand dial, putting the numbers down in the same order as the dials. The number indicates the total number of kilowatt hours used. Practice reading the electric meter.

Bring to class tested recipes for beverages that are refreshing to use in hot weather. What is a "tested recipe"? Select one or two to make in the laboratory. Practice making others at home. The following are refreshing beverages:

ORANGEADE

Juice of one orange	$1\frac{1}{4}$ tbsp. sugar
$\frac{1}{2}$ tsp. lemon juice	$\frac{2}{3}$ c. water

Mix ingredients thoroughly. Perhaps the mixture may need straining. Chill before serving.

Fruitade or lemonade may be made also.

LEMONADE

Juice of 3 lemons
¾ c. sugar, or more if desired
1 qt. water

Mix the sugar with the juice; add the water. Fill a glass two-thirds full, add cracked ice (small pieces), and place one slice of lemon on top of each glass. How may the flavor of lemonade be varied?

APPARATUS FOR THE KITCHEN

Stoves are of various types and must be selected to suit the kind of fuel to be used and the size of the kitchen in which they are to be placed.

A fuel is a substance which when burned produces heat, and it is this heat that cooks food when applied to it.

Wood, coal, gasoline, kerosene, manufactured and natural gas, are the fuels commonly used. Electricity is also used for cooking, but is not a fuel. The stove is the apparatus in which the fuel is burned and through which the heat is given off.

In selecting a stove or range, choose one that is plain in design and has little nickel finish. A stove covered with decorations is hard to keep clean.

Porcelain-finished gas and electric stoves are easy to keep clean. Many gas and electric ranges have the oven built on a level with the top of the stove. The oven is easier to use in this position than when underneath the burners.

Gas and electric stoves are now made with fireless cooking attachments for both boiling and baking.

While these are more expensive in price than other types, they are great savers of fuel when properly used.

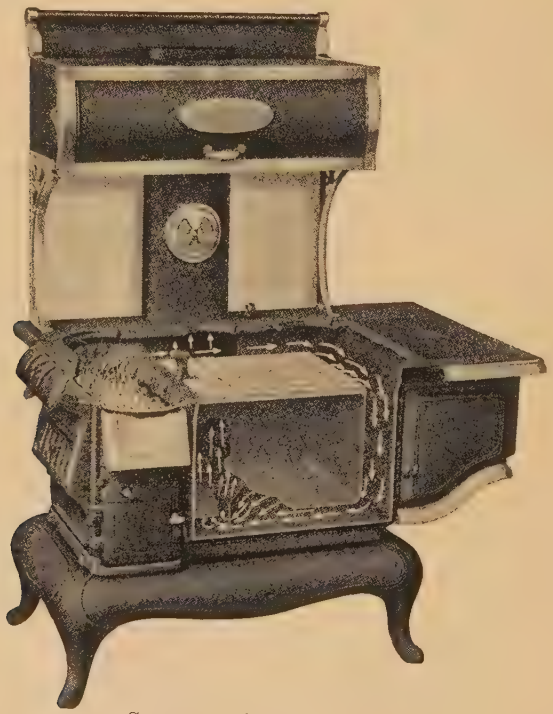
A stove must be in good condition if it is to do good cooking. A coal or wood range must have soot and ashes removed regularly from the inside of pipes, firebox, and ash-pit. Whenever gas burners cannot be regulated to burn without a yellow flame, they must be taken apart and cleaned by boiling in a weak solution of soda.

A Fireless Gas Range

There should be in the kitchen a supply of cooking utensils of the right kind to meet any need. Good utensils to use for boiling, stewing, and steaming are made of aluminum or enamel ware of good grade; for baking, earthenware, glass, sheet iron, and tin are used; iron is used for sautéing and frying.

Aluminum, wooden, or heavily plated tin spoons are needed in the kitchen. These are better than enameled spoons because enamel is apt to chip off when the spoon strikes hard surfaces. Steel knives are best with the steel blade running through and riveted into the wooden handle. One or more spatulas should be a part of the equipment.

Any device that aids in doing work well, but more quickly and easily than it has been done before, is a labor-saving device.



SECTIONAL VIEW OF STOVE
SHOWING CIRCULATION OF AIR AROUND OVEN

Fireless cookers, pressure and steam cookers, cake- and bread-mixers, food-grinders, and double-boilers are examples of labor-saving devices that are useful in the kitchen. Every housekeeper should have as many labor-saving devices as possible.

The equipment in the kitchen is arranged in two

centers: (1) the preparation center, where the food is prepared, cooked, and served; (2) the cleaning-up center, where the food is put away and the dishes are washed and placed in cupboards. The general arrangement of the preparation center should be as follows: the storage spaces for food to the left of the work table or cabinet, the stove to the right of the work table or cabinet, and the serving-table or serving-tray to the right of the stove and close to the dining-room door. All small equipment needed at the work table or cabinet, or at the stove, should be placed where it can be reached quickly and without walking. In the cleaning-up center the stack table, for the dishes should be at the right of the sink, the drain board at the left of the sink, and the dish cupboards at the left or above the drain boards and next to the dining room; all small equipment used in washing dishes should be close to the sink. It is very difficult to arrange some kitchens so that all unnecessary steps can be avoided, so that there is good light on all working surfaces, and so that all small equipment is placed conveniently for work. In planning a new kitchen great care should be taken so that it can be made an efficient workshop.

HOME PROBLEMS AND QUESTIONS

Find the price of the following: a gas range, a coal or wood range, a two-compartment fireless cooker, food-grinders, double-boilers, spatulas, refrigerators, garbage-cans.

Look through the advertisements in the magazines and papers, at home or in the public library, and make a list of other labor-saving devices and cooking utensils not named in the lesson. How many of these have you seen used?

Make a list of all the utensils you consider necessary in a kitchen; then make a second list of those utensils you would like to have but which are not necessary. What is the price of the utensils in the first list? Bring the lists to school for discussion.

MODEL SINK

A SINK PLACED HIGH ENOUGH TO BE CONVENIENT FOR A TALL PERSON; NOTE THE EXTENSIONS ON THE LEGS. THE DISHES ARE SLID THROUGH THE OPENING TO THE PANTRY WHERE THEY CAN CONVENIENTLY BE PUT AWAY IN THE DISH CUPBOARDS WHICH ARE PLACED ON THE WALL BACK OF THE SINK. IN THE LOWER LEFT-HAND CORNER IS A FIRELESS GAS STOVE, AND IN THE PANTRY A TEA-CART

Visit a hardware store, if possible, to study new types and kinds of equipment.

What is the price of an electric refrigerator suitable for use in your home? Perhaps you have one, or you have seen one at a neighbor's house. What are the advantages and disadvantages in using an electric refrigerator as compared with an ice refrigerator?

Where should matches be kept in the kitchen? Why?

LABORATORY EXERCISES

TEMPERATURES

Experiment:

Examine the thermometer to be used in taking temperatures.

1. Is it a Centigrade or a Fahrenheit thermometer?
2. What is " boiling-point " on each? Freezing-point?
3. (*a*) What is the temperature of one cup of water in the top part of a double-boiler after the water in the lower part has been boiling twenty minutes? Continue boiling. Does the water in the top part of the double-boiler ever reach boiling-point? (*b*) What is the temperature of one cup of water in a small saucepan over direct heat when the first small bubbles appear on the surface? When the large bubbles come to the surface and break? When the fire is turned higher and the bubbles form and break more quickly? The vapor which comes off the surface of the water is called steam. Continue boiling the water for a few minutes; remove from the fire and measure the water. What has happened?
4. Examine oven thermometers: (*a*) to be set in the oven; (*b*) in the door of the oven.

Examine the fireless cooker, if there is one in the laboratory; if not, the class may make one, following the directions given in the Farmers' Bulletin No. 771, " Home-made Fireless Cookers and their Use ", obtained by writing to the U. S. Department of Agriculture, Washington, D. C.

ROLLED OATS

3 c. boiling water 1 c. rolled oats 1 tsp. salt

Heat water to boiling-point by placing the top part of the double-boiler over direct heat; add salt; stir in the rolled oats. Cook ten minutes. Place over water in the double-boiler; cook one hour.

This may be cooked in the fireless cooker.

If the fireless cooker has a large compartment, fill the large kettle half full of boiling water, place the prepared oatmeal in a small, tightly covered kettle, and set on the wire rack placed inside the large kettle, so that the hot water is below the top of the small kettle. Close the cooker and do not open until the food is needed for the meal. Cereals may be put in the fireless cooker at night and will then be ready for breakfast in the morning.

BAKED APPLE

Wash the apple, remove the core, leaving the apple whole, and fill the cavity with sugar. Raisins or nutmeg may be used also. Put a little water in the pan to prevent burning. Bake slowly until the apple is tender when pierced with a fork.

DISHWASHING

The housekeeper sometimes considers dishwashing "drudgery", and it may be so when poor equipment is used for the task, or when she does not know how to do the work correctly. The best type of housekeeper feels that every part of her work is worth doing well, and whenever she thinks about why she is doing the task, it ceases to be drudgery. To know the reason for washing dishes helps to make the work more interesting. Dishes are washed to make them more sanitary and more pleasing to use. It is not safe or pleasant to eat from dirty or sticky dishes.

The equipment needed for washing dishes consists of plenty of clean hot water, good soap or soap powder, scouring-powder, dishpans, dish-drainer, dishcloth and mops, dish-towels, bottle and sink brushes; and there may be added a plate-scraper, a metal dishcloth, and a soap-shaker.

Dishwashers are now sometimes used, especially when there is a large number of dishes to wash.

Dishwashers are made in large sizes for hotels, restaurants, and cafeterias, but those used in the home are very different.

There are two kinds of water, hard and soft. When soap will not make good suds in the water, it is because the water is "hard." Hard water is water that has taken up lime or iron from the soil, and is the kind that usually comes from wells. Rain water is soft water, and is better for washing dishes because soap makes a good suds in it. If hard water must be used, borax, ammonia, or a strong soap powder or soap must be added.

Soap is best for use when it is very dry. It may be purchased by the dozen cakes or bars, or by the box. Some persons make "soft" soap at home by boiling scraps of fat with lye made from wood ashes.

The steps in washing dishes correctly are:

1. Remove the dishes from the table. Remove the bits of food from the plates with the rubber plate-scraper or a piece of paper. Rinse off very dirty dishes. Pile together dishes that are alike.

2. Put to soak all cooking utensils. Hot water should be put in those which have contained sugar or syrup, and cold water in those which have been used with milk, eggs, cereal, starch, or flour.

3. Pour hot water in the dishpan, make a good suds with the soap, use a clean dishcloth (not a "rag") or mop, and wash every dish carefully. Do not have the dishpan full of dirty dishes while washing. Always wash the cleanest dishes first. Dishes are sometimes washed with a spray, from an especially made nozzle, on the end of a rubber tubing which is slipped over the faucet at the sink. This method requires the use of a large amount of water, so that, while it is a sanitary plan, yet it is not possible to use such a spray when

the amount of hot water is limited or the supply of water is high in cost.

4. Place the washed dishes in a drain-pan or dish-drier, being careful not to crowd them. Crowding dishes in a pan is apt to chip them and makes it hard to scald them thoroughly. This pan or drier should be placed at the left of the pan in which the dishes are washed because this will save unnecessary motions in putting the dishes from one into the other.

5. Rinse the dishes thoroughly with boiling water, being sure that each dish has been rinsed inside and out. If the dishes have been scalded in a dish-drier, the drier may be set on the drain board and the dishes allowed to dry without wiping. The silver and glass should be washed first. They will look best when wiped and polished dry with a towel. Some persons like to dry all the dishes with a towel. This is a good method, but it takes more time than drying them in a rack or drier.

6. Scrape out and rinse off the cooking utensils. Use plenty of hot soapy water for washing them; wash thoroughly, both inside and out, scouring if necessary. Rinse with boiling water and wipe dry. Steel knives may be scoured with scouring-powder applied with a cork.

7. Wash off the drain boards and tables, and scour them with the powder and a brush if necessary. Use clean water for this. Wash out the sink and scour it with a brush and scouring-powder when the soapy water will not remove the stains.

8. Wash the dish-towels in clean soapy water, removing all spots. Rinse in clean water, shake out, and pull into shape. Hang to dry on a rack for this purpose in the kitchen, or, better still, hang outdoors in the sun. Wash and rinse the dishcloth or dish-mop.

9. Clean out the dishpan thoroughly, wipe it dry, and put it away.

LABORATORY EXERCISES

CARE OF EQUIPMENT

The Sink

1. Find the waste-pipe; the trap. Of what value is the trap?
2. Of what materials is the sink made?
3. Of what materials are the drain boards made?
4. Of what materials are the faucets made?
5. To clean the sink:

ONE-PIECE KITCHEN SINK
AN EXCELLENT TYPE

(*a*) Faucets — brass may be cleaned with scouring-powder. If stained, use vinegar or lemon juice before scouring; nickel needs only washing with soap and water.

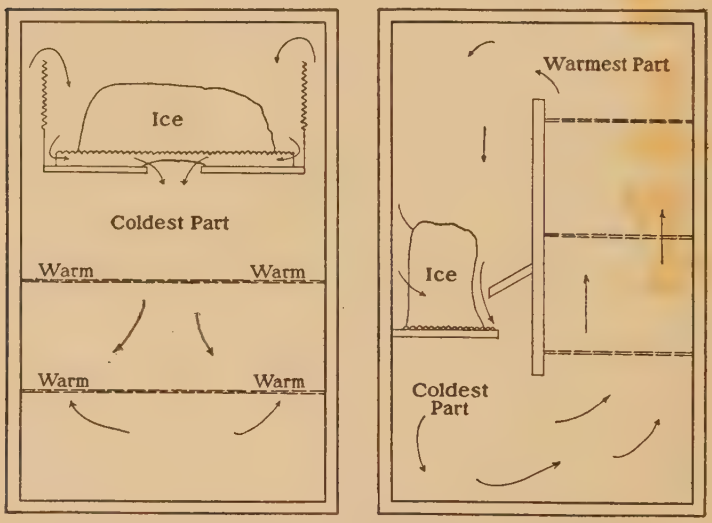
(*b*) Wash drain boards and sink.

Every sink needs a sink-strainer through which dishwater or other liquids may be poured, thereby catching all refuse. Clean boiling water should be poured down the waste-pipe after very greasy water.

The Refrigerator

1. Find the waste-pipe. Into what does it drain? Can it be removed for cleaning?

2. Of what material is the lining of the refrigerator?
3. What other parts of the refrigerator may be removed when cleaning?
4. To clean the refrigerator:
   (*a*) Remove immediately any food that has been spilled.
   (*b*) Once a week remove all food and ice; take out the shelves and other parts; wash these and the inside of the ice-box with clean, warm, soapy water and rinse with clean cold water; a solution of washing-soda may be poured down the drain-pipe. Do the work as quickly as possible.



Circulation of Air in Two Common Types of Refrigerators

The Garbage-can

If no liquid material is placed in the garbage-can, the garbage may be wrapped in newspaper before placing in the can. This keeps the can in excellent condition.

1. To clean, when garbage is wrapped, wash out with clean, hot, soapy water once a week.

2. To clean, when garbage is not wrapped, scrub with a brush, using a strong washing-soda solution; rinse with boiling water; dry in sun. A dirty garbage-can has a bad smell and attracts flies. A garbage-can must always be kept tightly covered.

Have you ever seen an incinerator used? What are the trade names of incinerators widely advertised?

CRACKED WHEAT

1 c. cracked wheat 5 c. water 2 tsp. salt

Heat the water in the top part of the double-boiler over direct heat; add salt; stir in the cracked wheat. Place over boiling water and cook five hours. Serve with sugar and cream.

When gas, electricity, kerosene, or gasoline are used for fuel it is better to cook this cereal in a fireless cooker. Why?

REVIEW QUESTIONS

1. What equipment is needed for washing dishes well?
2. What are the two kinds of water used?
3. Which is the best kind to use for dishwashing? Why?
4. How should the dishes be prepared for washing? The cooking utensils?
5. State the steps in washing and drying dishes.
6. How should the dish-towels and dishcloth be cared for after dishwashing?
7. Have you ever washed dishes by this method?
8. Have you ever seen a dishwasher used?
9. What is an "iceless refrigerator" and how is it operated?

THE HOUSEKEEPING SCHEDULE

Home-making is a broader term than housekeeping. It is necessary to house, clothe, and feed a family correctly, to keep the members in the best of health; and this work is called housekeeping. When we speak of home-making, however, we include, besides housekeeping, the creating and maintaining of a home in which the

members of the family may live a happy, useful life, through having wise counsel and guidance along spiritual, educational, and social lines. Sometimes this is

PLACEMENT OF FOOD IN A REFRIGERATOR HAVING THE ICE COMPARTMENT AT THE TOP

NOTE THAT THE MILK, CREAM, AND BUTTER ARE KEPT ON THE TOP SHELF, WHICH IS THE COLDEST PLACE IN THE REFRIGERATOR

spoken of as "creating the atmosphere in the home", and it is usually considered woman's duty. A woman who spends all her time on housekeeping, and who never has time to counsel, guide, or help her family in their activities, is spending too much time on mere house-

keeping and devoting too little time to real home-making.

The home-maker should plan her work so that she has time for home-making. She may have to leave undone certain unnecessary tasks; she may require better equipment in order that she can do her work more rapidly; and she may need to learn time-saving methods for doing certain pieces of work. Many women do not try to shorten the hours spent on housekeeping, because they have no desire to find time for home-making or for recreation; but such women are not the best type of home-makers.

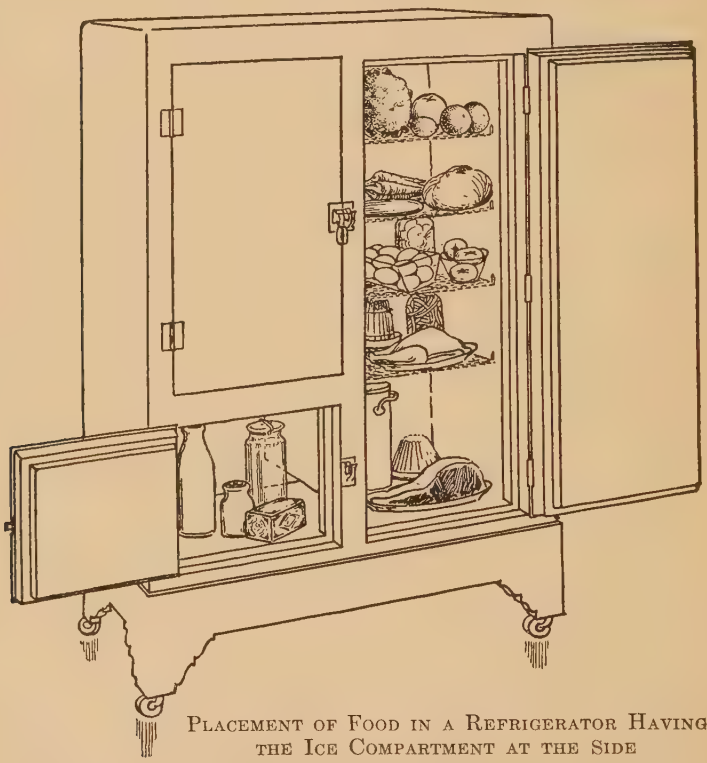
The housekeeper who does her work most easily follows a plan or schedule. Such a schedule will need to be varied often, because of interruptions of different kinds; but having the plan helps to prevent friction, saves time and energy, and makes possible some leisure for recreation and home-making.

Some work, such as making beds and planning and cooking meals, must be done every day. These are called "daily tasks." Certain other duties, such as the laundry work, come once a week and are called "weekly tasks." There is also work that does not come so frequently, such as canning fruit, and these duties are called the "occasional tasks."

When making a schedule, first plan for the daily tasks, then allow time for the weekly and occasional tasks. The arrangement of the work will depend upon the location of the home, the type of family, the standard of living, and whether household helpers are employed. The beginning housekeeper will have to experiment with her work until she finds the best arrangement of tasks.

In doing the work in the school laboratory it is well to learn to take as few steps as possible, to make

no unnecessary motions, and to proceed in an orderly way. When practicing in the home the things learned in the laboratory, you should constantly try to see



PLACEMENT OF FOOD IN A REFRIGERATOR HAVING THE ICE COMPARTMENT AT THE SIDE

NOTE THAT THE MILK, CREAM, AND BUTTER ARE PLACED BELOW THE ICE COMPARTMENT, WHICH IS THE COLDEST PLACE IN THE REFRIGERATOR

whether it is possible to do the work by a shorter method with as good results. The hours spent on housekeeping may be shortened by (1) using good tools, well arranged; (2) using efficient methods of work, always trying new ones that seem worth while; (3) following a

schedule; (4) distinguishing between the necessary and unnecessary tasks when time is limited, and doing only those necessary for the comfort of the family.

HOME PROBLEMS AND QUESTIONS

Arrange a plan for the work to be done in your home every day. Probably your mother already has such a plan and will tell you which task she does first, second, and so forth.

What part of the work do you perform? At what time in the day do you do it? What are the weekly tasks done in your home? Do you help with any of them? How much time every week do you spend on these tasks?

Make a list of work that you consider "occasional tasks."

In what ways have you seen women waste time in housekeeping? In what ways have you seen women waste energy in housekeeping?

LABORATORY EXERCISES

CORN-MEAL MUSH

3 c. water	1 c. corn meal
1 c. milk	1½ tsp. salt

Heat the water in the top part of the double-boiler over direct heat. Mix the milk with the corn meal. When the water is boiling pour it slowly over the corn meal, stirring until the mixture is smooth; add salt. Return to top part of double-boiler and place over boiling water. Cover and cook two hours. Serve warm with cream and sugar.

SAUTÉED CORN-MEAL MUSH

Prepare corn-meal mush, following above directions. Rinse out the inside of a bread pan or mold with cold water,

being careful to wet the sides as well as the bottom. Do not wipe the inside of the pan; pack the hot corn-meal mush into the mold, being careful to make it solid. Set away to cool several hours. When cold, slice crosswise into pieces about three quarters of an inch thick. Have a frying-pan hot; in this put bacon drippings or butter, and sauté the mush until well browned on both sides. Serve with syrup or honey. This may be used as a breakfast dish and is also suitable for luncheon.

REVIEW QUESTIONS

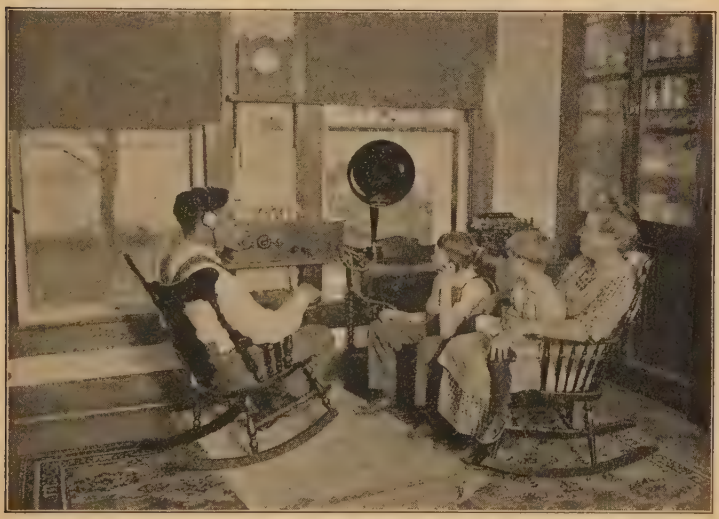
1. Explain the difference between housekeeping and home-making.
2. Into what groups may the housekeeping tasks be divided?
3. Why is it a wise plan to have a schedule for housekeeping?
4. How should the schedule be made?
5. In what ways may a schedule be interrupted?
6. On which days in the week do you think it best to do the laundry work, the baking, the cleaning? Give reasons.

THE USE OF LEISURE TIME

The home-maker should arrange for some leisure time in her schedule. This can be done when houses are well planned and equipped and when the housekeeper uses some thought in planning her schedule. Labor-saving devices have made working in the home easier; many of the tasks formerly done at home have been taken over by factories and other outside agencies, and at the same time various activities of interest to women have developed outside of the home. In some families it is necessary for the home-maker to earn all or part of the living for the family; but in the majority of families the home-maker is not responsible for earning the money with which to operate the home.

The home-maker may have a lot of leisure time or she may have very little, depending on the number of members in the family, the type of home in which she

lives, and her methods of doing housework. Every woman should find some time during the working day when she can sit down or lie down, when she can read the newspaper; and she must also find time to talk with and be a companion to her family, to play with and read to her children. A woman is more interesting



LISTENING TO THE RADIO

A FORM OF AMUSEMENT WHICH MAY BE ENJOYED BY THE ENTIRE FAMILY

to her family when she takes time to read, to join a club, or to go to a party, because in so doing she gets her mind off her housekeeping and becomes interested in other people and in activities outside her home.

In every community there are things which need to be done by women for the improvement of the community, and the home-maker who helps in such work broadens herself through her interest in others. Every home-maker should know about the activities outside

the home which are of interest to the members of her family; she should know something about the schools which the children attend, and about the movies, the theaters, and the clubs to which the children go. No woman can do her full duty as a home-maker unless she has some knowledge of the things which influence her family outside the home, urging improvement of conditions which are not the best.

Every woman should devote some share of her leisure time to doing things which give her pleasure, but she should be willing to devote some part to helping others in the community. Perhaps the club to which she belongs is raising money with which to equip a playground for children, or to buy a lot on which to build a library; perhaps the church is giving a Christmas bazaar to raise money; perhaps she has been asked to teach a Sunday-school class or to take part in an entertainment being given by her club; and with such things she should help.

Since women have been given the right to vote in city, town, county, state, and national elections, it is the duty of every woman to do so as soon as she becomes of age. If a woman is to vote intelligently she must read the newspapers and magazines, must attend meetings where candidates for office are speaking, and must study the platforms of these candidates so that she can decide which she considers correct. Too many women do not know about the laws which govern them; voting for the men or women who, one thinks, will make the best laws and set the best standards for government, is a desirable plan.

Girls may find useful things to do in a community, and they should devote some share of their time to such pursuits rather than spend all their leisure time in "having fun." Perhaps the Fresh Air Camp needs

more money for its work, and the girls in the neighborhood can help by selling lemonade or candy; perhaps some neighbor needs some one to play with her little child while she does her housework; or perhaps a neighbor has errands to be done. Any girl who helps her mother at home, so that her mother has more

DINNER TIME IN A BOYS AND GIRLS' CLUB CAMP

THESE CAMPS USUALLY LAST SEVERAL DAYS AND A PROGRAM OF INSTRUCTION OR FUN FILLS EVERY HOUR OF THE DAY

leisure time to take part in outside activities, is helping in community work.

Girls who belong to girls' Sewing, Baking, or Canning Clubs, to the Camp Fire Girls, to the Girl Scouts, or to any other organization teaching girls to do things that are worth while, are the girls who will develop into the most useful women, women who will be good homemakers and good citizens.

HOME PROBLEMS AND QUESTIONS

To what organizations in the community do women belong?

What is the purpose of each organization?

What organizations for girls are there in your community?

Which of these are organized for the purpose of (1) helping to better the community; (2) training girls to be good home-makers; (3) giving pleasure to the members?

Do any of these girls' organizations have more than one purpose?

CLEANING THE KITCHEN

A kitchen must be kept very clean if it is to be a sanitary place in which to prepare food. Some cleaning needs to be done each day, while a thorough cleaning should be given whenever there seems to be a need. Cupboards should be kept neat and in order, the floor, woodwork, and walls should be cleaned when dirty, and all working surfaces and equipment should be cleaned after each using.

Cleaning walls and ceilings. When oil paint has been used, walls may be wiped with a broom, covered with a soft cloth, for frequent cleaning. Once or twice a year they should be scrubbed with a soft brush, using warm water and borax, rinsing and drying immediately. When enamel paint has been used on walls, they may be washed with warm soap suds, rinsed, and wiped dry.

Walls that are finished with water paints, such as calcimine, cannot be washed, and cannot be wiped hard enough to clean them.

Washable paper may have to be used on the kitchen walls of an old house; to clean this, wipe it with a damp

cloth moistened in warm water. Never use a very wet cloth, because the paper will be loosened if the water gets under it.

Tile walls may be washed with soap and warm water, rinsed, and wiped. Tiles used on walls are usually glazed and are easy to clean. Keen cement, sometimes used as a wainscoting on kitchen walls, should be finished with enamel paint; then it can be cleaned with warm water to which have been added a few drops of ammonia, rinsed, and wiped.

Cleaning woodwork. Woodwork is easiest to clean when finished with enamel paint, because it can then be washed with warm, soapy water, rinsed, and wiped like a dish.

Dull-finished paint may be cleaned with whiting applied with a soft cloth moistened in warm water. Wiping this off the wood makes a dust and should be done before the rest of the cleaning.

Occasionally hardwood will be used in finishing a kitchen, and this may be oiled, waxed, or varnished. Water injures these finishes, and the wood must be wiped often with soft, dry flannel or flannelette cloths to keep it free from dust. When it is necessary to clean the wood more thoroughly, it may be cleaned with the following mixture:

1 qt. boiling water
3 tbsp. boiled linseed oil
1 tbsp. turpentine
(From "Housewifery", by BALDERSTON)

Wash the wood with one cloth and wipe with a dry one.

Cleaning floors. Tiles used on floors are sometimes not finished with so high a glaze as wall tiles. To clean such a floor make a strong, hot soap suds to which washing-soda has been added, scrub the floor

with a long-handled brush instead of using a mop, rinse in clear water. A kitchen floor finished with tile is easier to clean when there is a floor drain through which the dirty water may drain away. Such a drain may also be put in a linoleum-covered floor.

Linoleum that is varnished may be cleaned with the same mixture recommended for cleaning varnished woodwork. No linoleum should be cleaned with strong soap suds, alkalies, or milk.

Hardwood floors in a kitchen may be waxed, varnished, or oiled. Waxed and varnished floors spot with water and are not desirable. Oiled, waxed, or varnished floors may be cleaned with the same mixture used for varnished woodwork.

Painted floors should be washed with clear warm water. If it is not possible to clean them in this way, a mild soap may be used in the water, rinsing the floor thoroughly. Paint is not a desirable finish for a kitchen floor. If a soft-wood floor cannot be covered with linoleum, it should be oiled in preference to painting.

Cleaning windows. Clear water, applied with either a soft cloth, paper, or chamois, may be used in cleaning slightly soiled windows, or a commercially made cleaning paste or whiting may be applied to the glass with a moist cloth, allowed to dry, and then polished with a dry cloth. For very dirty windows a few drops of ammonia or a little washing-soda may be added to the water. In cold weather the cloth used in cleaning windows may be moistened in wood alcohol instead of water.

Cleaning metals. Aluminum darkens when some foods containing alkalies are cooked in it, while with others, containing acids, it is brightened. Aluminum may be scoured with steel wool to clean it when foods have been burned on it, after which it may be washed in the usual manner. To brighten aluminum place it

in a pan of boiling water to which dilute oxalic acid has been added, about two tablespoons of acid or more if needed to one gallon of water, allowing the utensil to boil in the water until the tarnish is removed. Oxalic acid should be kept out of the reach of children, because it is a poison; and acid may injure cloth on which it drops and should always be handled carefully.

Zinc may be used to cover a table in the kitchen, and will spot badly. To remove these spots, rub them hard with whiting moistened with water or kerosene. Or rub with hot vinegar, then wash in hot soap suds, rinse, and wipe dry.

Iron utensils may be scoured with cleaning powders, washed, and dried. If very soiled or greasy, boil in a solution of washing-soda and water, wash in hot soap suds, and dry thoroughly. When iron utensils are to be put away for some time, they should be rubbed with oil and wrapped in paper. A stove when left unused for some time should be either covered with a thick coating of stove polish or rubbed with oil to prevent rust.

Stains may be removed from porcelain by rubbing with kerosene applied with a soft cloth or paper. To remove iron-rust stains, rub the spot with dilute hydrochloric acid, which is a poison and must be put away carefully after use.

Enamelware utensils should never be scraped with a steel knife, but may be cleaned by scouring with a fine cleaning powder, washed, rinsed, and wiped dry. If necessary to scrape the pan, use a wooden spoon for the purpose.

Tin utensils should not be scraped with a steel knife. Use a wooden spoon for this purpose when necessary, scour with cleaning powder, wash in soap suds, rinse, and dry thoroughly.

The daily cleaning of the kitchen should include the

cleaning of all utensils, putting them away, the cleaning of the sink and all tables, cabinets, and shelves that have been used, the cleaning of the stove, and the sweeping or mopping of the floor.

The weekly cleaning of the kitchen should include the cleaning of the refrigerator, the cleaning of cupboards, the dusting of woodwork and walls, and a thorough cleaning of the floor.

Occasionally the woodwork and windows must be washed, and once or twice a year the walls should be thoroughly cleaned. Fresh curtains should be hung at the windows whenever there seems to be a need. Good curtains for kitchen windows are made of curtain muslin, unbleached muslin, curtain cheesecloth, or gingham. They should be finished with plain hems so that they can be easily laundered, and it is a good plan to have two pairs for each window, so that there will always be a clean pair to replace dirty ones.

LABORATORY EXERCISES

Give the laboratory its weekly cleaning.

1. Make a list of the equipment and supplies that will be needed in cleaning the kitchen. Discuss types of equipment.
2. Clean the cupboards. Put all foods in cans or jars, and label. What kind of cans or jars may be used?
3. How should the laboratory floor be cleaned? Is there a floor drain?
4. How is the woodwork finished and how should it be cleaned?
5. Clean stoves, refrigerators, and other equipment, following directions.

Clean the kitchen at home and write a report of the work, stating order of work, time required, and methods used. Discuss in class.

Discuss methods for exterminating flies from a kitchen or from around the door outside. Why are we so careful about keeping flies out of the house?

REVIEW QUESTIONS

1. How should walls finished with oil paint be cleaned?
2. How should tile walls be cleaned? Tile floors?
3. What is the best finish for woodwork in the kitchen? Why?
4. How should linoleum be cleaned?
5. How may windows be cleaned in cold weather? In warm weather?
6. Should enamelware be scraped with a knife? Why?
7. Give one method for cleaning aluminum.
8. What may cause rust stains to appear on a porcelain sink?
9. If you were going to close a house for the summer, how would you prevent iron utensils from rusting?
10. What work should the daily cleaning of the kitchen include? The weekly cleaning?
11. What kind of clothing should be worn when doing the weekly cleaning?

PROCESSES USED IN COOKING

Food is cooked: (1) to improve its appearance, (2) to improve its flavor, (3) to make some foodstuffs more digestible, and (4) to kill micro-organisms.

The first cooking that was done by primitive man was the roasting of game by the open fire and the parching of corn on hot stones, both processes requiring no cooking equipment. Before water could be used as a cooking medium, primitive woman had to begin pottery-making and basket-weaving; she had to have utensils which would hold the water. Food was first cooked in water by placing hot stones in the water with the food, not by placing the utensil containing the water over the fire. Some processes used in camp cookery are modified forms of primitive cooking.

A Cooking Laboratory in a Rural School

Cooking processes at our command to-day are:

I. Direct application of heat.

1. Broiling: cooking over a hot fire, exposing the surfaces of food to the direct heat, with short cooking of the interior of the food; example, broiled beefsteak.

2. Roasting: cooking by an open fire, exposing the surface to the direct heat, but allowing a long period of cooking for the interior of the food; example, a roast cooked under the direct gas flame in an oven.

Strictly speaking, the popular use of the word "roasting", as applied to meat cooked in an oven, is incorrect. "Roast chicken" and "roast beef" are really baked meats.

II. Application by means of heated air.
Baking: cooking in a heated oven; example, baked bread.

III. Application by means of heated water.
1. Boiling: cooking in boiling water; example, boiled potatoes.
2. Stewing or simmering: cooking in water below the boiling-point; example, beef stew.

IV. Application by means of steam.
Steaming: (*a*) cooking in a utensil into which steam passes; example, steamed pudding; (*b*) cooking in a closed utensil surrounded by steam; example, milk heated in double-boiler.

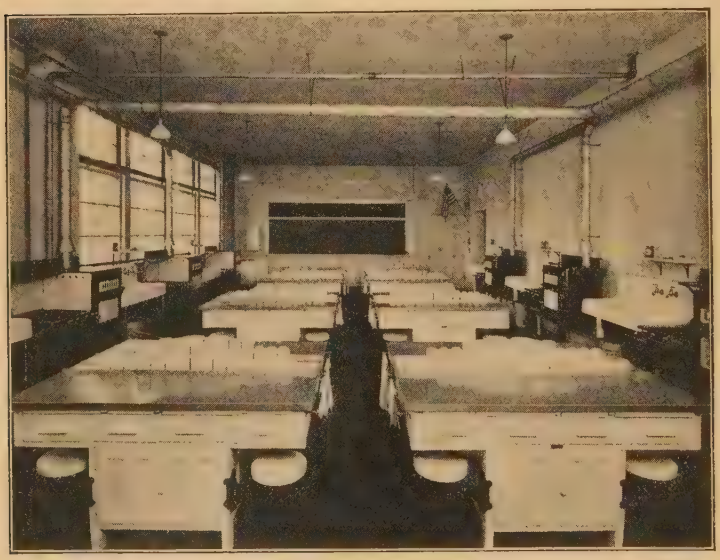
V. Application by means of heated fat.
1. Sautéing: cooking in a small quantity of fat; example, browned potatoes.
2. Frying: cooking in hot fat deep enough to cover the food; example, croquettes.

VI. Application by means of heated metal.
Pan-broiling: cooking in a frying-pan or on a griddle without the addition of fat; example, broiled bacon.

VII. Combination processes.
1. Braising: a combination of stewing and baking; example, casserole of beef.
2. Fricasseeing: a combination of sautéing and stewing; example, fricasseed chicken.

In all cooking great care must be taken to follow directions carefully. When tested recipes fail, it is usually the fault of the cook and not the fault of the recipe. Cooking becomes much more interesting when one understands why certain processes are followed, and in the laboratory work in a school course this is one of the important things to learn.

Every girl should learn to work accurately yet quickly, making only what motions are necessary, thereby saving time and energy. Sometimes there is



A Modern Foods Laboratory in the Minneapolis Public Schools

Each group of four girls has a sink and range, and each group of two girls a desk to use

only one "best" way to do a thing; in other cases there may be several equally good, and it is always wise to use methods that are considered the best by experts.

LABORATORY EXERCISES

FRENCH TOAST

1 c. milk	$\frac{1}{4}$ tsp. salt
1 egg	6 slices stale bread

Beat the egg slightly, add salt and milk, dip each piece of bread in the mixture. In a hot frying-pan place some fat.

When it is melted, place the bread in the frying-pan and brown on both sides. Serve with syrup.

CARAMEL SYRUP

Melt one half cup of sugar in a frying-pan, stirring until it is a brown syrup; add one half cup of boiling water; boil until the syrup is as thick as desired. Serve with the French toast.

TOAST

Cut slices of bread evenly and of even thickness. Toast in oven or on toaster until the slices are of an even brown on both sides, and until the bread is thoroughly dried and crisp. Toast may be served in this form and then it is called "dry toast." Butter may be spread on it and the toast placed in a hot oven until the butter is melted, when it is known as "buttered toast." "Cinnamon toast" is made by spreading toast with butter and sprinkling with sugar and cinnamon, mixed, using three parts of sugar to one of cinnamon. "Dipped toast" is made by quickly dipping toasted bread into hot salted water.

Which kinds would be best to serve for breakfast?

REVIEW QUESTIONS

1. Why is food cooked?
2. How was the first cooking done? (Look in the encyclopedia or elsewhere and find more about methods used in primitive times.)
3. Define roasting; baking.
4. Define broiling; frying; sautéing.
5. Define boiling; steaming; stewing.
6. Name two combination processes.
7. How may cooking be made interesting work?

SOME POINTS ABOUT FOOD

When people or animals go without food too long, they lose flesh and become very weak; finally all motion of the body ceases. The eating of proper food is very important if the body is to be kept well and strong.

Sometimes the body is likened to an engine. The engine must have fuel to make it go; so must the body have fuel in the form of food to keep it going. The engine runs when the fuel burns. Food is burned in our bodies, but in a different way than in the engine because it burns without a flame.

Parts of the engine wear out and must be replaced; in the same way parts of our body wear out, and the food we eat replaces and repairs the worn-out tissues and parts. An engine needs to be oiled (lubricated) to run smoothly. The body must be lubricated, and some foods are used for this purpose, as regulators of body processes. Just as the engine needs a spark to ignite the fuel, so the body must have certain protective foods for this purpose, and to promote the health of the body.

Foods have different functions in the body and are sometimes classified as follows: (1) building foods, such as milk, cheese, meat, fish, eggs, dried beans, peas, and lentils, nuts; (2) fuel foods, such as cereals, dried beans and lentils, starchy vegetables, sugars, and fats; (3) regulating foods, such as fruits, vegetables, milk, bran in cereals, or whole-wheat bread; (4) protective foods, including all those containing minerals and vitamins. Some foods are used for more than one purpose in the body and may be classified under more than one group.

Another method of classifying foods is according to the foodstuffs which they contain.

There are five main classes of foodstuffs. In some foods several or all of the foodstuffs may be present.

The five groups of foodstuffs are:

1. Protein, used in the body for body-building, and to produce energy and warmth. It is present in such foods as meat, milk, cheese, cereals, and legumes.

2. Carbohydrates, used in the body to produce energy and warmth. They are found in such foods as potatoes, rice, fruits, cereals, and legumes.
3. Fat, used in the body to produce energy and warmth. It is found in large amounts in such foods as butter, cream, olive oil, and fat meat.
4. Minerals, used in the body for body-building, and found in most foods. Chemists in analyzing foods have found several kinds of minerals, but those which are most frequently lacking in the diet are iron, phosphorus, and calcium. Iron is used especially to make red corpuscles in the blood, and the best sources of iron are egg yolk, lean beef, legumes, green vegetables, especially spinach, and whole cereals. Calcium (lime) is used in building bones and teeth and other tissues, and the best source is milk; while whole grains, vegetables, fruits, and legumes contain some calcium. Phosphorus is important to the normal well-being of the child. Phosphorus is found in milk, egg yolk, legumes, whole cereals, fruits, leafy vegetables, and lean meat.
5. Water, used in the body to help in digesting the food and in carrying away waste material from the organs, thus keeping the body in a healthy condition. Water is found in practically all foods in either large or small amounts.

Besides these five foodstuffs there is found in some foods a very important class of substances called vitamins, which are necessary for health and growth. Little is known about the vitamins, but through experiments in feeding animals it has been found that vitamins are necessary and that certain foods contain

them. At present the chemist has classified four kinds of vitamins, and there are others to be discovered.

Daily Food Reminder

By Madeleine Connor and Aneta Beadle [1]

CHOOSE ONE FOOD FROM EACH GROUP EVERY DAY

Group I	Group II	Group III		Group IV	Group V
Vegetables and Fruits	Foods Rich in Protein	Foods Rich in Carbohydrates		Foods Rich in Fats	Foods Rich in Vitamins
Greens	Milk	Bread	Starch	Butter	Milk
Spinach	Eggs	Crackers		Cream	Butter
Lettuce	Cheese	Cake		Lard	Eggs
Cabbage	Lean meat	Rice		Salt pork	Oranges
Tomatoes	Poultry	Cereals		Bacon	Apples
Green peas	Fish	Potatoes		Fat meats	Tomatoes
String beans	Oysters	Tapioca		Salad oil	Spinach
Turnips	Dried beans	Macaroni		Chocolate	Carrots
Carrots	Dried peas	Molasses	Sugar		Lettuce
Onions	Nuts	Honey			Cabbage
Apples	Cocoa (milk)	Syrup			
Oranges	Ice cream	Jelly			
Grapefruit	Custard	Preserves			
Pears		Sugar			
Berries		Dried fruits			
		Frozen ices			

The four known classes of vitamins are:

1. Vitamin A (fat soluble A), found in green vegetables, egg yolk, and butter. When children are not given enough of these foods, they are undeveloped, sickly, and have eye diseases.
2. Vitamin B (water soluble B), found in green vegetables, whole cereals, fruit juices, and milk. A lack of this vitamin causes malnutrition, a loss of appetite, and a disease called beriberi.
3. Vitamin C (water soluble C), found in orange and lemon juices, uncooked green vegetables,

[1] Published by Dept. of Agricultural Extension, Purdue University, LaFayette, Indiana.

fresh fruit, especially oranges and lemons, and tomatoes. A lack of this vitamin causes skin diseases and scurvy.

4. Vitamin D, a recently discovered vitamin, found in cod liver oil, egg yolk, spinach. This is the vitamin known to prevent rickets.

When the meals for the day are planned, foods must be selected that will furnish some of each of the foodstuffs and vitamins, so that the body shall not lack material for growth, warmth, and energy.

LABORATORY EXERCISES

MARGUERITES

12 wafers	$\frac{1}{4}$ tsp. salt
1 egg-white	$\frac{1}{4}$ tsp. vanilla
2 tbsp. powdered sugar	$\frac{1}{2}$ c. chopped raisins or nuts, or the two mixed

Beat the egg very stiff. Sugar should be pressed through a wire sieve before using. Add the other ingredients to the sugar and mix carefully with beaten egg-white. Spread on top of the wafers. Brown in a moderate oven.

SALTED ALMONDS

Use Jordan almonds if possible. Blanch by letting them stand in boiling water until the skin is loosened. Remove the skins, being careful not to break the almonds apart when handling them. Place olive oil in a frying-pan and when it is hot add the nuts; stir over fire until nuts are a light brown color; remove from fat and drain on paper. Sprinkle with salt.

Peanuts may be used instead of almonds. Peanuts do not need blanching to remove the skin.

REVIEW QUESTIONS

1. Why is it necessary to eat food?
2. Into what five groups may food be divided? Give examples of foods under each group.

3. Name the five groups of foodstuffs that foods contain.
4. Name the minerals that are of most importance to the body. For what purposes is each used?
5. Of what value to the body are vitamins? Name foods in which they are found.
6. What kind of disease is rickets? Beriberi? Scurvy?
7. If you were burned in the laboratory, how should the burn be treated? What should you avoid doing?
8. If you cut your hand, how should the cut be treated?
9. Why is it necessary to care for cuts and burns carefully?
10. Is there a fire extinguisher in the laboratory? How is it to be used?

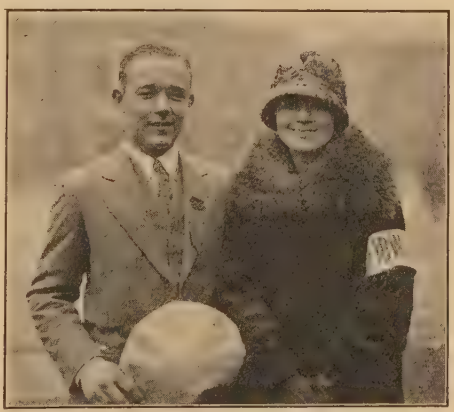
HEALTH RULES

Every girl wants to be attractive, and in order to be attractive she must be well and strong, and in order to be well and strong she needs to follow the rules of good health. A few good rules to follow are these:

1. Keep yourself clean.
   Take a bath every day if possible.
   Change your underclothes often.
   Brush your teeth after each meal if possible, and always before going to bed.
   Have your face and hands clean before going to the dining table to eat a meal.
   Keep your hair clean by shampooing often.
   Keep the finger nails clean.
2. Eat the right kind of food.
   Learn to eat all varieties of food.
   Study foods so that you can select a well-balanced diet.
   Eat fruit every day.
   Eat two or more vegetables every day.
   Drink plenty of water.
   Drink a pint or more of milk every day.
   Eat regularly and three meals a day.
   Do not "piece" between meals.

3. Go to bed early and sleep from nine to eleven hours.
   Keep your window open at night in the bedroom at all seasons of the year; a sleeping porch is a fine place to sleep.
4. Have a bowel movement at a regular time every day.
   Do not use laxatives unless prescribed by the doctor.
   Use a laxative diet and exercise if troubled with constipation.
5. Take exercise every day; walking, swimming, and playing games furnish good exercise.
   Always dress suitably for such exercise, so that the body has perfect freedom of movement.
6. Avoid all habits that are harmful.
   Keep the mind clean as well as the body.
   Control the temper and the tongue.

Many children are underweight for their age and for their height. Tables have been made which show the correct weight for a child when the age and height in inches are known. Because a child is underweight for his height may not indicate that he is in poor health, for underweight is not the only standard by which we can



This is Alice Burkhart, age 15, of Audubon County, Iowa, and George Cuskaden, age 14, of Shelby County, Indiana, who were chosen as America's healthiest girl and boy in the national health contest conducted by the Boys' and Girls' Club Department at the International Livestock Show in Chicago

judge; yet we use the Height and Weight Table because it is a definite standard to follow. If the weight of a child is more than ten per cent below the standard, he or she should be examined by a physician to see whether there is any cause, such as bad tonsils or other physical defects, since such causes must be remedied before the child will gain in weight. After physical defects have been remedied the following suggestions should be followed:

1. Drink plenty of milk each day; at least three glasses should be taken. In some schools mid-morning and mid-afternoon lunches, consisting of milk and crackers or bread with butter, are served to undernourished children.
2. Eat eggs and butter, plenty of cereals and potato; eat concentrated foods so that a sufficient amount of food can be consumed.
3. Eat at least one green vegetable or one serving of fruit every day. Fruits and vegetables are sometimes called "regulating foods" because they are the foods which contain laxative material, minerals, and vitamins.
4. Take plenty of rest each day. Go to bed very early and also rest during the day. The rest period during the day may be after the mid-morning and mid-afternoon lunches.
5. Follow a regular schedule each day, eating, going to bed, resting at regular times.
6. Avoid excitement, which is not good for people who want to gain weight. Underweight boys and girls should not go to the movies or to other entertainments at night; they should never get into crowds.
7. Take some exercise out of doors. Violent exercise is not good for underweight boys and girls;

neither should they take too much exercise; rest is more important than exercise when one is underweight.

If a boy or girl is twenty per cent or more above the weight indicated for the height, it is a wise plan to try to reduce in weight. Probably more food is being eaten than is necessary and too many foods that contain large amounts of starch and sugar are being eaten. It would be a good plan to avoid eating potatoes, rice, dried beans and peas, macaroni, and bread in large quantities; to eat little or no candy, and to use less sugar on cereals, fruits, and other foods. An overweight boy or girl should eat plenty of green vegetables and fresh fruits.

It is a good plan to watch one's weight, since this is a standard by which to judge one's physical condition.

LABORATORY EXERCISES

Weigh and measure each member of the class.

Make a list of the foods you ate yesterday; remember to include any foods eaten between meals. Did you have foods from each of the groups shown in the table headed "Daily Food Reminder"?

In what other ways besides using it to drink did you have milk? Do you think you had three glasses during the day?

How can you learn to eat foods that you do not like? Why is it a wise plan to learn to eat all kinds of foods?

Keep a list of the foods you eat for one week. Are you eating the right foods? Have you tried eating any new foods? If you are underweight, what foods, besides milk, should you eat plentifully?

Is a bath taken only to get the skin clean? Ask the physiology teacher.

Why should the underclothes be changed often? Ask the clothing teacher.

Tables prepared by Bird T. Baldwin, Ph. D., and Thomas D. Wood, M. D.

Weight-Height-Age Table for Boys of School Age

Height (in.)	Average Weight for Height (lbs.)	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years	11 Years	12 Years	13 Years	14 Years	15 Years	16 Years	17 Years	18 Years	19 Years	Height (in.)
38	34	34	34*														38
39	35	35	35														39
40	36	36	36*														40
41	38	38	38	38*													41
42	39	39	39	39*	39*												42
43	41	41	41	41*	41*												43
44	44	44	44	44	44*												44
45	46	46	46	46	46*	46*											45
46	48	47*	48	48	48	48*											46
47	50	49*	50	50	50	50*	50*										47
48	53		52	53	53	53	53*										48
49	55		55	55	55	55	55	55*									49
50	58		57*	58	58	58	58	58*	58*								50
51	61			61	61	61	61	61	61*								51
52	64			63	64	64	64	64	64	64*							52
53	68			66*	67	67	67	67	68	68*							53
54	71				70	70	70	70	71	71	72*						54
55	74				72*	72	73	73	74	74	74*						55
56	78				75*	76	77	77	77	78	78	80*					56
57	82					79*	80	81	81	82	83	83*					57
58	85					83*	84	84	85	85	86	87					58
59	89						87	88	89	89	90	90	90				59
60	94						91*	92	92	93	94	95	96				60
61	99							95	96	97	99	100	103	106*			61
62	104							100*	101	102	103	104	107	111	116*		62
63	111							105*	106	107	108	110	113	118	123	127*	63
64	117								109	111	113	115	117	121	126	130*	64
65	123								114*	117	118	120	122	127	131	134	65
66	129									119	122	125	128	132	136	139	66
67	133									124*	128	130	134	136	139	142	67
68	139										134	134	137	141	143	147	68
69	144										137	139	143	146	149	152	69
70	147										143	144	145	148	151	155	70
71	152										148*	150	151	152	154	159	71
72	157											153	155	156	158	163	72
73	163											157*	160	162	164	167	73
74	169											160*	164	168	170	171	74

Age — Years		6	7	8	9	10	11	12	13	14	15	16	17	18	19
Average height (inches)	Short	43	45	47	49	51	53	54	56	58	60	62	64	65	65
	Medium	46	48	50	52	54	56	58	60	63	65	67	68	69	69
	Tall	49	51	53	55	57	59	61	64	67	70	72	72	73	73
Average annual gain (lbs.)	Short	3	4	5	5	5	4	8	9	11	14	13	7	3	
	Medium	4	5	6	6	6	7	9	11	15	11	8	4	3	
	Tall	5	7	7	7	7	8	12	16	11	9	7	3	4	

Age is taken at the nearest birthday, height at the nearest inch, and weight at the nearest pound. A child is considered 6 years old at any time between 5½ and 6½ years.

Weight-Height-Age Table for Girls of School Age

Height (in.)	Average Weight for Height (lbs.)	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years	11 Years	12 Years	13 Years	14 Years	15 Years	16 Years	17 Years	18 Years	Height (in.)
38	33	33	33													38
39	34	34	34													39
40	36	36	36	36*												40
41	37	37	37	37*												41
42	39	39	39	39*												42
43	41	41	41	41	41*											43
44	42	42	42	42	42*											44
45	45	45	45	45	45	45*										45
46	47	47*	47	47	48	48*										46
47	50	49*	50	50	50	50	50*									47
48	52		52	52	52	52	53*	53*								48
49	55		54	54	55	55	56	56*								49
50	58		56*	56	57	58	59	61	62*							50
51	61			59	60	61	61	63	65							51
52	64			63*	64	64	64	65	67							52
53	68			66*	67	67	68	68	69	71*						53
54	71				69	70	70	71	71	73*						54
55	75				72*	74	74	74	75	77	78*					55
56	79					76	78	78	79	81	83*					56
57	84					80*	82	82	82	84	88	92*				57
58	89						84	86	86	88	93	96*	101*			58
59	95						87	90	90	92	96	100	103*	104*		59
60	101						91*	95	95	97	101	105	108	109	111*	60
61	108							99	100	101	105	108	112	113	116	61
62	114							104*	105	106	109	113	115	117	118	62
63	118								110	110	112	116	117	119	120	63
64	121								114*	115	117	119	120	122	123	64
65	125								118*	120	121	122	123	125	126	65
66	129									124	124	125	128	129	130	66
67	133									128*	130	131	133	133	135	67
68	138									131*	133	135	136	138	138	68
69	142										135*	137*	138*	140*	142*	69
70	144										136*	138*	140*	142*	144*	70
71	145										138*	140*	142*	144*	145*	71

Age — Years		6	7	8	9	10	11	12	13	14	15	16	17	18
Average height (inches)	Short	43	45	47	49	50	52	54	57	59	60	61	61	61
	Medium	45	47	50	52	54	56	58	60	62	63	64	64	64
	Tall	47	50	53	55	57	59	62	64	66	66	67	67	67
Average annual gain (lbs.)	Short	4	4	4	5	6	6	10	13	10	7	2	1	
	Medium	5	5	6	7	8	10	13	10	6	4	3	1	
	Tall	6	8	8	9	11	13	9	8	4	4	1	1	

The figures not starred represent exact averages in round numbers.
The starred figures represent smoothed or interpolated values.
The following percentage of net weight has been added for clothing (shoes, coats, and sweaters are not included) :

For Boys :
For weights from 35 to 63 pounds — 3.5 per cent of net weight is added.
For weights 64 pounds and over — 4 per cent of net weight is added.

For Girls .
For weights from 35 to 65 pounds — 3 per cent of net weight is added.
For weights from 66 to 82 pounds — 2.5 per cent of net weight is added.
For weights from 83 pounds and over — 2 per cent of net weight is added.

Make a set of health rules for yourself to follow for a week, indicating at what time each thing shall be done. Should these be varied at different seasons? Why?

Why do we consider good health so necessary? How does poor health handicap a boy or girl, or an adult?

By what methods is the health of school children protected by the school officials, the health authorities, other agencies?

Perhaps you can organize a Health Club for the girls. Directions may be secured by writing for Health Education Bulletin No. 4, entitled "Teaching Health", from the Bureau of Education, Department of the Interior, Washington, D. C.

THE BREAKFAST PLAN

There are many types of breakfast that may be served, and every family will have its own particular plan for this meal.

The foods generally used for breakfast are fruit, cereals, bread and beverages, with sometimes egg, meat, or vegetable dishes.

The menu should vary with (1) the time of year, (2) the type of work which the members of the family are doing, (3) the kind of meal eaten the night before, and (4) the size, weight, and age of the members of the family.

In the summer it is well to avoid eating much meat, and meat can easily be omitted from breakfast.

It is well, also, to eat less heat-producing food in summer than in winter, because then the body does not need so much heat to keep it warm.

When too much food is eaten, a good deal is lost because some foodstuffs cannot be stored in the body and must, therefore, be carried off from the body in the form of waste material.

If a man is doing hard work out of doors, he needs more food than does the man who sits all day at his

desk in an office, because the man in the office does not use so much muscular energy in doing his work as the man who works with his muscles.

If dinner is the meal served in the evening, the family does not wish nor need much for breakfast the following morning. If a light supper is the last meal of the day, then more food should be served for breakfast.

The members of the family differ in size, weight, and age, and the food eaten should vary in amount and kind. The baby and small child should not eat the same food, nor so much, as the man in the family. How then shall the meal be planned to suit each member of the family? It is a good plan to make a menu that contains enough food of the right kind for the man, and to have in that menu some food that will suit the small child.

The following are some general suggestions for planning the breakfast:

1. Breakfast consisting of fruit, bread, and beverage; suitable for the man who works in an office and the woman who does light work. For the small child, cereal and milk would have to be added and tea or coffee omitted.

2. Breakfast consisting of fruit, cereal, bread, and beverage; suitable for the man who does a good deal of walking but works indoors, and for the woman who does ordinary housework, office work, or teaching. With cocoa or milk as the beverage, this would be good for the small child, the schoolgirl or schoolboy, and the college student.

3. Breakfast consisting of fruit, eggs, bread, and a beverage, instead of No. 2. Milk and cereal, however, should be added for the child.

4. Breakfast of fruit, cereal, a meat or egg dish, bread, and a beverage; suitable for the man doing hard

manual work out of doors, or for women doing hard manual work. The meat should be omitted in the child's diet, and milk or cocoa used as the beverage.

5. Breakfast consisting of fruit, cereal, meat or egg dish, a vegetable, bread, and a beverage. This breakfast is a very heavy meal and should be eaten only by

THREE TYPES OF COFFEE POTS

FROM LEFT TO RIGHT: DRIP COFFEE-POT, COFFEE PERCOLATOR, AND POT FOR BOILED COFFEE

a man doing hard manual labor out of doors in cold weather. Many families eating this type of breakfast do so because they like it and not because they need the food in the daily diet. In many cases they would be in better health if less food were eaten.

HOME PROBLEMS AND QUESTIONS

Are these good breakfast plans? Why?

1. For a hot summer morning: stewed fruit, sausage, buckwheat cakes, coffee.

2. For a small child: coffee, cereal, meat dish, and hot biscuit.

3. For a man doing hard manual labor out of doors: fruit, coffee, toast.

4. For the schoolgirl: fruit, cereal, cocoa, and toast.

Make two good plans for your breakfast at this season of the year.

Make two good plans for the breakfast of a small child at this season of the year.

Bring these plans to class for discussion.

LABORATORY EXERCISES

BEVERAGES

Experiment:

1. Examine coffee beans, finely ground, and pulverized coffee. What is the price of each?

2. Examine samples of tea, both green and black; compare the color and shape of the leaves. Are there bits of stem or other refuse present? Compare prices.

COFFEE

Coffee may be made in several ways

1. Boiled coffee, made with egg.

1 heaping tbsp. of ground coffee
1 c. water
½ egg-shell or ¼ of an egg-white

Mix together coffee and egg, using a little of the water; add the rest of the water. Boil gently for three to five minutes. Let stand in warm place for five minutes. Serve. The egg is used to settle the grounds.

2. Boiled coffee without egg.

Use the same proportions as in No. 1. Place the ground coffee in a cheesecloth bag, being careful to pack it very loosely; tie securely.

3. Percolated coffee.

Made in a percolator pot, constructed so that the ground coffee is placed in a container at the top. The water boils up through a tube to the ground coffee, and then drips back into the bottom of the pot.

There are many kinds of percolators sold.

4. Drip coffee.

Like coffee made in percolator, except that the coffee-pot is arranged so that water must drip through the ground coffee from the top.

TEA

1 tsp. tea 1 c. water

Heat fresh water to boiling-point. Pour it over the tea, let stand in a warm place three minutes. Pour off tea into hot teapot or cups. Serve at once.

Tea should never be boiled, nor the water allowed to stand on the tea leaves longer than three minutes, because the longer it stands the more tannic acid is present.

BEVERAGES

Beverages are made by combining liquids and flavoring materials.

There are many kinds of beverages, examples of which are coffee, tea, cocoa, lemonade, and grape juice.

Water is the liquid used in making most beverages. In addition to the water taken in beverages one should drink a great deal of pure water, because the composition of the body is two thirds water. One may go without food for weeks, but it is not possible to live very long without water. Most persons, because of the taste, like to drink hard water in preference to soft water. Hard water comes from wells and deep springs, and has collected certain mineral substances from the soil over or through which it has come.

When the soil is full of filth, the water flowing through it will be impure and may be the cause of typhoid fever, malaria, or other diseases. Impure water may be clear and sparkling in appearance, and the only way to be certain of its purity is to know about the source from which it comes. In the city, the water supply is

so carefully watched that the water coming into the house is usually pure. If a well is so situated that the water coming into it passes through soil into which a barnyard or an outside toilet or a pig-pen is drained, it is likely to be dangerous to health.

When there is the slightest doubt about the purity of water, it should be boiled before drinking.

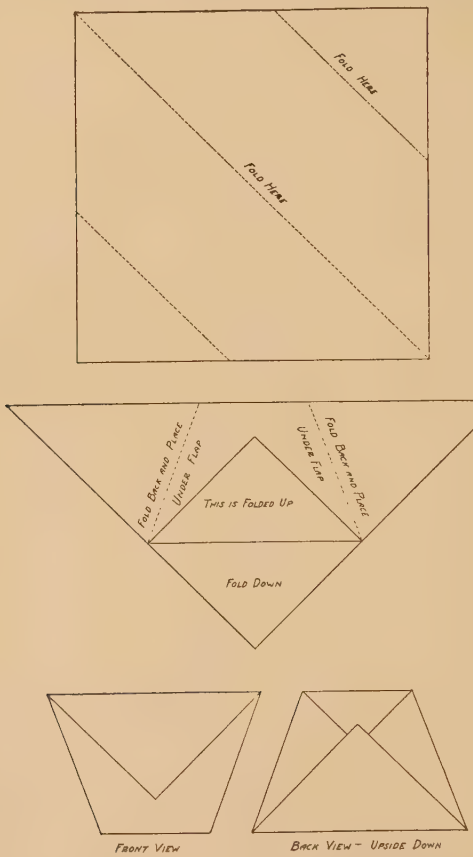
Boiled water has a flat taste because some of the air in it has been driven off by boiling. The taste may be improved by pouring the water back and forth between two pitchers, thus forcing air into it again. Water may be taken during meals, providing it is not used to "wash down" the food. If food is chewed thoroughly and eaten slowly, and if water is never taken while the mouth is full, then the food is digested better when some liquid is taken with the meal. It is never a wise plan to drink large quantities of ice-water with meals, since this may cause poor digestion of food, because the water chills the stomach.

Ice is frozen water, and is just as pure as the water from which it was made. Ice from a pond, lake, or river should never be dissolved in drinking water or other beverages. To cool drinking water with such ice, place the water in a jar or bottle and set against the ice until cold.

Artificial ice is made by freezing water in tanks, the freezing temperature being secured by the evaporation of ammonia. This ice should be much purer than ice from ponds, lakes, and rivers.

At school every student should use his or her own drinking-cup unless there is a bubbling fountain. It is dangerous to drink out of a cup that has been used by other persons, because if any one has a disease, such as diphtheria, sore throat, or tuberculosis, it may be given to others who use the same cup.

Paper cups are very convenient to use at school when there are no drinking fountains. Such cups are



When Paper Drinking Cups Are Not Provided, One Can Make a Cup from a Sheet of Clean White Paper, Folding It with Clean Hands on Top of a Clean Desk. (*From Health Education Bulletin No. 17, Department of the Interior; Bureau of Education, Washington, D. C.*)

often provided from a container hanging on the wall by the faucet or pump from which the water is obtained.

HOME PROBLEMS AND QUESTIONS

From what sources does the drinking water that you use at home and at school come? If there is any doubt about the purity of the water, where may it be sent for analysis?

Is the ice used in your home natural or artificial ice? What does 1000 pounds cost? Is the ice cheaper when you buy a 1000-pound book of tickets or when you buy a 500-pound book of tickets?

LABORATORY EXERCISES

COCOA

1. Examine cocoa nibs, pulverized cocoa.
2. Pour one half cup of boiling water over two teaspoons of cocoa. Observe the liquid.
3. Mix together one half cup of cold water and two teaspoons of cocoa; boil five minutes. Compare this with No. 2. What has happened?

COCOA

$\frac{1}{4}$ c. cocoa	1 c. water
$\frac{1}{4}$ c. sugar	3 c. milk
$\frac{1}{8}$ tsp. salt	Vanilla

Mix cocoa, sugar, salt, and water. Boil ten minutes. Heat milk in a double-boiler; add to this the cocoa paste. Cook twenty minutes. Add vanilla.

An attractive way to serve cocoa is to place a spoonful of whipped cream on top of each cup.

ICED COCOA

Make the cocoa as described above. When cool, set in refrigerator to chill. When it is time to serve the cocoa, beat it with a Dover egg beater and pour into the glasses in which it is to be served. On top of each glassful put a spoonful of whipped cream, and grate a little sweet chocolate over the top of cream or sprinkle with nutmeg.

REVIEW QUESTIONS

1. What is a beverage?
2. Name some commonly used beverages.
3. Why is it important to drink pure water?
4. How should impure water be treated when it must be used for drinking?
5. From what source does the water supply come that is used in your school?
6. What is ice?
7. When may ice be put into beverages?
8. Where does the ice come from that is used in your neighborhood? What is the price of one hundred pounds?

BEVERAGES (*Continued*)

Coffee, tea, cocoa, and chocolate are the beverages generally used for breakfast. Coffee and tea should be used only by grown persons; children may take cocoa. Because many older people drink coffee and tea, it would not be possible to prepare a meal completely without knowing how to prepare these beverages.

The coffee bean or berry is the seed of a fruit resembling a cherry, and is produced on an evergreen tree that grows in nearly all tropical countries. Most of our coffee comes from South America, mainly from Brazil. In preparing coffee for market the cherry-like fruit is allowed to ferment so that the pulp surrounding the seeds may become soft and can be removed. These seeds contain two "beans" which grow with their flat sides together and are inclosed in a husk. This husk has to be dried and then removed, when the beans fall apart. The coffee beans are then shipped to the country where they are to be sold. The beans are roasted to make them brittle and to develop flavor, and are sold to the housekeeper in this form, or as "ground coffee."

Coffee loses its flavor and aroma very quickly after

being ground if it is left in an open container, and for this reason some prefer to buy the roasted coffee beans and grind them only as needed. Ground coffee should be sold in air-tight cans, but if sent from the store in paper sacks should be emptied into air-tight cans at once.

Coffee contains substances that are often harmful for grown persons and are never good for children; one is caffeine, a substance that stimulates the nerves; another is tannic acid, which may disturb digestion.

Most of the tea we use comes from China, Japan, Ceylon, and India. Tea is made from the leaves of a plant called Thea. The plant sends out four sets of new shoots a year, and the leaves from these shoots are gathered and cured for tea.

There are two types of tea, black and green tea. Green tea is made by drying the tea leaves at a high temperature, which causes them to keep their green color and to curl up. Black tea is made by allowing the leaves to wither and ferment, which causes them to turn dark before being dried. This process gives black tea a flavor different from that of green tea.

Tea contains a substance called "theine" which acts as a stimulant to the nerves. There is also present tannic acid, which is bad for the digestion.

Cocoa is produced from the pod of the cocoa tree which grows in tropical countries. The pod is shaped somewhat like a cucumber, and inside is a large number of seeds surrounded by pulp. The seeds are removed from the pulp and, after being allowed to ferment a few days, are roasted. The husk is then removed and the seed is divided into two parts which are called "cocoa nibs."

When cocoa nibs are ground and pressed into a cake, the cake is known as chocolate. This chocolate is

rather bitter in taste and is used in cookery. When sugar is added to the cake it is called sweet chocolate.

Cocoa is made from chocolate by removing a large part of the fat. It is then ground and sold in bulk or in tin containers. The fat that is removed from the chocolate is used for cocoa butter. Cocoa has a good deal of food value, and when served as a beverage in which milk is used it adds food value to a meal.

Children should not take all of their milk in the form of cocoa, since cocoa contains a stimulant something like the caffeine found in coffee and tea, although milder and in smaller amounts. It may be harmful, however, if taken three times a day.

Cereal coffees contain no coffee, but when properly made may be a pleasing substitute, because they provide a warm drink without the stimulants found in coffee. They do not have the coffee flavor, and many people do not like them on this account.

"Minute coffee" and "minute cocoa" are pulverized products to which hot water is added to make the beverages. They are convenient to use on camping trips, but are expensive and are not practical for general use.

LABORATORY EXERCISES

BEVERAGES FOR INVALIDS

EGG COCOA

1 egg-white	2 tsp. cocoa
2 tsp. sugar	$\frac{2}{3}$ c. milk
Few grains salt	

Beat white of egg until stiff; add slowly sugar, salt, and cocoa. Add one half of egg mixture to the milk and pour into glass in which it is to be served. Put remaining egg on top.

HOT LEMONADE

Make same as cold lemonade, but use boiling water instead of cold water. Serve hot.

EGG LEMONADE

1 egg
1 tbsp. powdered sugar
2 tbsp. lemon juice
2 tbsp. crushed ice
$\frac{1}{4}$ c. cold water

Beat the egg slightly with a Dover egg beater; add the sugar, water, and lemon juice. Mix thoroughly, then strain through cheesecloth over crushed ice.

Have you seen other beverages served to invalids? Perhaps you can bring recipes to class.

REVIEW QUESTIONS

1. Describe the preparation of coffee for market.
2. How should coffee be cared for after it is purchased?
3. From what countries does most of the tea used in this country come?
4. Describe the preparation of tea for market.
5. Why are tea and coffee harmful to many people?
6. Should children drink tea or coffee?
7. What is cocoa? Chocolate? Cocoa nibs?

THE HOSTESS AND HER DUTIES

The woman or girl who entertains guests is called the hostess; the man is the host. To be a good hostess is a great accomplishment. The good hostess plans in detail the arrangements for her party, is always polite and thoughtful of her guests, and in every way tries to give them pleasure.

In making the arrangements for a party there are several things to consider:

1. The list of guests to be invited to the party. For receptions or other entertainments where a large number of guests are to be invited, one may ask as many of one's friends as one can

entertain without having the house or rooms crowded. When a small group of friends is to be entertained — as at a dinner, a luncheon, or a sewing party, where all the guests must talk together — it is a wise plan to invite only those guests who will enjoy each other.

TABLE FOR SERVING THE REFRESHMENTS AT A TEA OR RECEPTION
TEA AND COFFEE WILL BE POURED BY THE LADIES SEATED AT THE ENDS OF THE TABLE AND EVERYTHING WILL BE PASSED TO THE GUESTS BY THOSE ASSISTING IN THE DINING ROOM

If there is a guest of honor, one for whom the party is given, the friends invited should be those who would be interesting to her.

2. After the list of guests is made, the invitations must be given. There are two classes of invitations: (1) formal and (2) informal. A formal invitation is always written, printed, or en-

graved, and is for such entertainments as receptions or formal dinners. The invitation is written in the third person, as follows:

Mrs. John B. Smith
At Home
Wednesday, June the Seventh
Four to Six O'clock
250 Sterritt Place

Perhaps in the lower left-hand corner will be placed the name of the guest of honor, or a mention of the form of entertainment — as, for instance, "Musicale", when the entertainment is to be a program of music. The guest responds to such an invitation in this way:

Mrs. James L. Brown accepts with pleasure the kind invitation of Mrs. John B. Smith for Wednesday, the seventh of June, from four to six o'clock.

There are many variations in the methods of wording both invitations and acceptances, but all formal invitations are written in the third person and answered in the same manner.

An informal invitation may be given verbally in person or over the telephone, or an informal note may be written, such as:

My dear Mrs. Brown:

I am inviting a few friends to my house on Wednesday, June the seventh, at four o'clock, to meet my guest, Mrs. Jones, and I should be so happy to have you come and bring your sewing and spend the afternoon with us.

Hoping that we may have the pleasure of your company, I am

Yours sincerely,
Martha S. Smith

June the third
250 Sterritt Place

No matter what the form of invitation, the hostess's name and address, the date and time of the party, and possibly the form of entertainment, should be included.

A Tea Party for Dolly

This little girl has seen her mother serve tea to guests and is following her example

3. After the invitations are sent, the hostess must plan the details of the entertainment, being careful to consider every item, planning just how and when and by whom each thing shall be done. A party is never a success unless planned so that things move smoothly, so that the hostess need not be troubled by having things "go wrong" while the guests are present. It takes practice to learn how best to work out the plans for a party.
4. The hostess must look after the comfort of her guests, making sure that each has the best time it is possible for her to have. The good hostess never considers her own pleasure, but thinks only of the pleasure of the guest, always giving the best of everything to those she is entertaining. The hostess meets her guests upon their entrance to the room where she is receiving. She sees that they are properly

introduced to strangers and starts the conversation after the introduction, but is careful never to talk too much and never to talk about things that interest only herself. She watches constantly to see that the guests are well looked after, and when the party is over she stands where it will be convenient for the guests to speak to her when leaving.

To be a good conversationalist is an art; every girl should begin early to learn to talk about things other than herself and her own interests, to refrain from talking constantly, to be a "good listener", to talk in a pleasant tone of voice, never too loud, to enunciate each word carefully, and to pronounce and use words correctly. Through reading, traveling, and listening to the conversation of others, one acquires interesting information that may be used in conversation; when one has such topics to discuss, there is no temptation to gossip about other people.

A girl should be polite to every one, including her friends, elderly people, and the members of her own family. The kind thing is usually the polite thing to do. Social customs, manners, have developed because people must be considerate of one another if they are to live happily together. "Etiquette" is the term applied to these social customs, and it is a subject on which much has been written of help to one who does not know the accepted social forms.

LABORATORY EXERCISES

A RECEPTION FOR MOTHERS

Invite the mothers of the girls to the school for the laboratory period. The members of the class should receive and entertain them. Refreshments of tea, coffee, or cocoa,

sandwiches, marguerites, and salted nuts may be prepared and served by the girls.

SANDWICHES

Cut the bread into very thin slices; cream the butter by mashing and beating with a fork. Butter the slices of bread, add jelly if desired, lay the slices together evenly. Sandwiches are often cut into fancy shapes, such as round,

SANDWICHES MADE IN DIFFERENT SHAPES

CRUSTS ARE OFTEN CUT FROM THE EDGES OF SANDWICHES WHEN THEY ARE TO BE SERVED AT A PARTY

triangular, rectangular, or square. The crust may be removed, if desired. The bread scraps may be saved for a bread pudding. Wrap the sandwiches in a dry cloth, then in a slightly damp cloth until ready to serve.

FRUIT

Fruit is very valuable in the diet and, if possible, should be included in the menu every day. Fresh fruit can be purchased in the market at all seasons of the year.

It is desirable to eat fresh fruit every day, preferably for breakfast. Canned and dried fruits may be used when the fresh fruit is too expensive or not available.

Fruit eaten first at breakfast serves as an appetizer and makes one want to eat the rest of the meal.

Fruits are composed largely of water, but contain sugar, which is one form of carbohydrate, very small amounts of protein and fat, and mineral matter. All fresh fruits contain vitamins; oranges and lemons contain large amounts of vitamins. Orange juice is now given to children, beginning when they are three or four months old, because this furnishes vitamins that are necessary to the development of the growing child.

The mineral matter in fruit, including iron, phosphorus, lime, magnesia, and potash, is very valuable to the body.

The botanist says that fruits are the seed-bearing parts of the plant, but such foods as tomatoes and cucumbers, which really are fruits, we class as vegetables.

When fruits are considered as to their food value they are sometimes classified as (1) flavor fruits, containing a very large amount of water and very small amounts of the foodstuffs, and (2) food fruits, containing less water and larger amounts of the foodstuffs. Examples of flavor fruits are strawberries and watermelons. Examples of food fruits are bananas, dried figs, and dates.

Most persons like fresh fruit, but it does not agree with everyone. Cooked fruit can often be eaten when the raw fruit cannot, because the cooking softens the fruit and kills bacteria that may be present. Neither green fruit nor overripe fruit should be eaten.

Fruits are least expensive when purchased in season, that is, when they are being produced on the farms and in the gardens of the community. When fruits have to be shipped long distances they must be sold at higher prices.

One can usually get better fresh fruit by going to the market and selecting it than by ordering it by telephone. It should be looked over carefully for blemishes or decayed spots; fruit in poor condition is sometimes sold at a lower price than fruit in good condition, but the waste in preparation is such that the cost is really no lower than for the better fruits. Many fruits are sold by the pound, others by the measure, and some by the dozen. Fruits may cost less when purchased in larger quantities, and those that will keep well should be purchased in this way; for example, apples by the pound are much more expensive than by the bushel or by the barrel. When fruits are to be purchased for canning, it is a wise plan to buy in quantity; and when there is a good place in which to store such fruit as apples or pears for winter use, they too should be purchased in quantity. Dried fruits sold in packages containing several pounds are cheaper than when sold in pound lots.

Fruit should be cleaned carefully before being used as food. Even when the skin of the fruit is to be removed, it should be washed carefully. One handles both the skin and the fruit at the time of peeling. Berries and similar fruits should be washed thoroughly before being eaten or cooked.

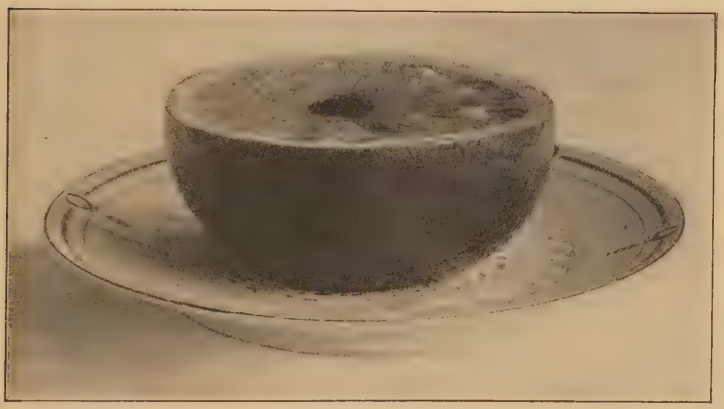
Fresh fruits are usually preferred when served cold, and should be chilled by placing them in the refrigerator for several hours before serving. When fruits are to be eaten with the fingers, finger bowls are sometimes used in serving the meal. Finger bowls should be about one third full of water and are usually set on a plate or tray made for the purpose. They should be placed at the left of the fruit plate, or above and to the left of the fruit plate, and should be removed from the table when the fruit plate is removed.

LABORATORY EXERCISES

FRUIT FOR BREAKFAST

GRAPEFRUIT

Wash grapefruit and cut crosswise into halves. Loosen the thick white skin by cutting each section of the fruit from the skin. Use scissors to cut the skin loose from the rind.



HALF A GRAPEFRUIT, PREPARED FOR BREAKFAST

ON SPECIAL OCCASIONS A PAPER, LINEN, OR LACE DOILY MAY BE PLACED UNDER THE GRAPEFRUIT TO MAKE THE SERVICE MORE ATTRACTIVE

Cut the core loose from the rind and remove white skin with core. Fill center of grapefruit with powdered sugar if desired. Serve on fruit-plate.

Have you ever eaten grapefruit prepared in any other way?

APPLE SAUCE

1 medium-sized apple
¼ c. water
⅛ tsp. cinnamon or nutmeg (if desired)
½ to 1 tbsp. sugar

Wash and pare the apple. Cut it into quarters and remove the core. Place in saucepan, add the water, cover tightly. Boil gently until apples are tender when pierced

with a fork. Add sugar and nutmeg or cinnamon. Cook until sugar is melted.

Other recipes for using apples may be brought from home by members of the class.

REVIEW QUESTIONS

1. Name the fruits that can be used for breakfast.
2. Which of these grow in your locality?
3. What are the foodstuffs found in fruits?
4. What is meant by purchasing "in season"?
5. What fruits are "in season" at the present time?
6. How much are apples per pound? How many pounds are in a peck and in a bushel of apples?
7. How does the price per bushel compare with the price paid when apples are bought by the pound?
8. What is the price of grapefruit? What does one serving cost?

MARKETING

The good housekeeper does her marketing with intelligent care, thereby saving money, yet giving her family adequate meals. Every housekeeper should set aside a definite amount of money to be used for food each year, dividing it into the amounts to be spent each month. The amount spent for food varies with the size of the income and the standard of living. Suggested proportions have been given for the amount of money to be spent for food when living on a given income, but these proportions are not adapted to all classes of people living under various conditions. Authorities have agreed, however, that every dollar spent for food should be used in this way:

One part, more or less, for vegetables and fruits.

One part, more or less, for milk and cheese.

One part, more or less, for meats, fish, eggs, and so forth.

One part, or more, for bread and cereals.

One part, or less, for sugar, fat, tea, coffee, chocolate, flavoring.

METHOD OF KEEPING THE FOOD ACCOUNT

(Using the five divisions suggested)

AUGUST, 1926

	Vegetables and Fruits		Milk and Cheese		Meat, Fish, Eggs, etc.		Bread and Cereals		Sugar, Fat, Tea, Coffee, Chocolate, etc.	
Aug. 1	1 doz. green corn	30	2 qt. milk	28	5 lbs. rib roast	1 10	1 box oatmeal	25	1 25-lb. sack sugar	1 75
	1 box blackberries	30	1 lb. cheese	45	1 doz. eggs	45	1 50-lb. sack flour	2 70	1 lb. coffee	50
	3 lbs. peaches	25							1 lb. butter	47
Aug. 2			2 qt. milk	28						
Aug. 3			2 qt. milk	28						
Aug. 4	1 bush. peaches	3 50			1 doz. eggs	50	1 box cake flour	39	1 cake chocolate	30
	1 pk. apples	65			10 lbs. bacon	2 50	1 box wheatena	25	1 lb. butter	47
	6 sweet peppers	25			2 lbs. round steak	45			3 lbs. cocoa	85
	1 pk. onions	50								
	1 pk. potatoes	75								
	2 lbs. green beans	25								

MONTHLY TOTALS SPENT FOR FOOD

Month	Vegetables and Fruits		Milk and Cheese		Meat, Fish, Eggs, etc.		Bread and Cereals		Sugar, Fat, Tea, Coffee Chocolate etc.	
January	8	25	7	75	7	50	8	60	6	25
February	7	85	8	10	7	80	7	95	7	00
March										
April										
May										
June										
July										
August										
September										
October										
November										
December										
Totals										

A Page from the Account Book on Which the Monthly Totals for Food Are Kept, Showing the Method for Ruling the Page

In order to know how much money is being spent for food the housekeeper should keep a food account. This may be kept on a sheet of paper ruled as illustrated on page 81. Put down the items each day. At the end of the month add up each column and see whether one fifth of the money spent has been used for each division. Rule a second sheet as indicated above, and put on this the totals for each month; at the end of the year add these totals, and it will be possible to tell just how much money has been used for food and in what proportions.

When one lives in the country and many foods come from the farm, the cost must be determined by finding what the market price would be, and weighing or measuring the food to determine the amount used, until one becomes familiar enough with the weights and

measures to be able to estimate by looking at the foods the amounts used.

To become a good marketer requires practice. The following suggestions will be helpful to the girl who is doing her first marketing.

1. If there are several groceries, meat markets, and bakeries in your locality, it is a good plan to visit all of them to determine whether it would be best to buy all foods from one store or whether certain foods may be purchased more reasonably at other stores. It is also desirable to know how foods are kept and handled, and whether they are in a sanitary condition when they reach your home. Patronize only reliable merchants.
2. It is a wise plan to make a list of the foods needed before going to the store. To do this, one would have to plan the meals at least for the day, and preferably for the week, before doing the marketing. Estimate the amount of money to be spent for these foods.
3. The housekeeper may save money by buying foods that are in season. Fresh vegetables, such as cauliflower, are higher in price in winter than in summer. Cabbage could be substituted for the cauliflower and would cost less.
4. Buy staple foods in quantity whenever there is a good place to store such foods. Some fresh fruits and vegetables may be purchased in quantity when they can be kept where they will not spoil until used.
5. Foods bought in packages cost more than those bought in bulk. Why?
6. Read the labels on canned goods and, after using the products, determine which brands you

consider the best to buy. Ask for these products by the brand name. Canned goods should be bought by the case when a quantity will be used. The size of cans is indicated by number — No. 2 and No. 3 cans being those generally used in the home.

7. Ask for foods by weight or measure rather than by the "quarter's worth" or "dime's worth" or by saying "a twenty-cent can of corn."
8. Foods "on sale" may be of inferior quality or damaged, and when the price is much below the prevailing price in other stores it is well to determine why before buying such foods. A grocer may be overstocked, however, and may wish to reduce the amount of food on hand; he will then sell food of good quality at a reduced price. Or a merchant may be "selling out" and will dispose of his stock at a reduced price, in order to complete the sale quickly. In such a case the foods may be very good in quality.
9. Mail-order houses often sell good foods at a lower price than the price at the local store, because they combine a wholesale and a retail business in one company, because they do not have to pay for the delivery of the merchandise, and because, having so many customers, they require a smaller profit on each article sold than the small stores must make in order to pay expenses.
10. If foods have been ordered by telephone, always check them, when delivered, with the list used in ordering. When foods are not in good condition, they should be returned to the store, and a reliable merchant will be glad to replace them with foods of good quality.

A wise housekeeper always keeps on hand canned products and other foods which may be used in getting a meal when unexpected guests arrive. These foods may be kept on a shelf alone, called the "emergency shelf." As soon as any of these foods are used, the supply should be replenished.

HOME PROBLEMS AND QUESTIONS

How does the business of the wholesale grocer differ from that of the retail grocer? Are there any wholesale firms selling foods in your locality?

Visit local groceries, meat markets, and bakeries, and make a list of the most desirable features about each store. Make a list of the features which you would consider essential if a grocery is to be (1) a sanitary place, (2) an agreeable place in which to buy.

Make a list of the features desirable in a sanitary meat market.

How many No. 2 cans are in a case of canned goods? How many No. 3 cans?

What foods would be called "staple" foods?

What foods would be suitable for the emergency shelf?

Make a list of green vegetables that can be purchased economically in winter.

Which fresh fruits are most economical to buy in winter? Why?

Ask your mother to allow you to keep the food account for one week. Has the money spent for food been proportioned according to the standard set in the text? If not, what group of foods has been purchased in too small amounts? Perhaps your mother can tell you why this happened.

MILK

Milk is one of our most important foods. When we drink milk we should remember that we are taking a real food and not merely something to take the place of water. When enough milk is used, some other food can be left out of the diet. Milk is a perfect food for

DAIRY COWS ON CLOVER PASTURE
A SOURCE OF GOOD MILK

infants or young animals and is a good food for grown persons.

When the chemist divides milk into its parts, he finds the following foodstuffs: protein, carbohydrates, fat, mineral matter, and water.

The mineral matter in milk is especially important, because it contains more calcium (lime) than any other food. Since bones and teeth are largely made of lime, it is particularly necessary that boys and girls have plenty while growing, and it is also important for older people.

Milk is also one of the best foods to supply us with vitamins, which are so essential for growth.

The protein in one glassful of milk is equal to the protein contained in one large egg, or in one and one third ounces of beef. Therefore when we use enough milk in a meal we do not need meat. The milk may be used in custards, escalloped and creamed dishes, or it may be used to drink.

Every boy and girl should use a great deal of milk — some say a pint and a half (three glasses) for every child over two years of age, while others say that one quart per day is not too much for the child under six years of age.

Clean milk is the only safe milk. Dirty milk may contain disease germs that cause typhoid fever, tuberculosis, or other diseases. Clean milk comes from clean cows kept in clean barns. The milk must be handled by persons with clean hands and clean clothes, and it must be placed in clean pails, bottles, or pans.

If milk is purchased from a store or dairy wagon it should be in bottles, tightly covered. The bottles must be kept in a cool place where there are no flies. If a bottle of milk is put in the refrigerator it must always be tightly covered. It should be placed in a part of the refrigerator removed from meats and vegetables or fruits, because it absorbs odors very readily. Always wipe the top of the bottle with a clean, damp cloth before pouring the milk from the bottle; always wipe the outside of the milk bottle before putting it in the refrigerator.

When the milk stands, the fat separates and comes to the top. This fat is then called *cream*. The milk remaining when the cream is removed is *skim milk*. The milk without its cream removed is *whole milk*.

Skim milk contains protein and the milk sugar (car-

bohydrate) which whole milk contains, and may be used for soups, sauces, or in other cookery.

Butter is made from cream. It is one of the easily digested fats and contains a considerable quantity of Vitamin A.

Butter substitutes are products resembling butter in appearance, but made by combining other fats than

Interior of a Modern Dairy Barn

Clean milk comes from clean cows, kept in clean barns

that from milk with milk or cream; these are sold at lower prices than butter. Oleomargarine and nut margarine are examples of butter substitutes. Butter is best for children; adults may use butter substitutes, and butter substitutes may be used in cookery to take the place of butter in recipes.

There are several kinds of milk that can be purchased. Milk that is heated to the boiling-point,

212° F., and cooled before it is sold, is called *sterilized milk*. The boiling changes the flavor but kills harmful bacteria that may have been in the milk. *Pasteurized milk* is milk which has been heated and kept at a temperature of 140° to 145° F. for twenty to thirty minutes, and then cooled quickly. This process kills bacteria that may cause disease. *Certified milk* is milk that is guaranteed by the producer to be especially clean and pure.

At the grocer's we buy *condensed* or *evaporated milk* in tin cans. This is milk that has had most of the water taken out of it and afterwards has been canned. This is useful to take on camping trips or journeys where fresh milk cannot be obtained. *Powdered milk* may also be found in the stores. This is a dry powder and must have water added before it is used.

Milk sours through the growth of certain bacteria (harmless) in the milk; the bacteria feed upon the milk sugar in the milk, and lactic acid is formed. The thick part of the sour milk is called the "curd" and the thin watery part is the "whey." Sour milk is used in cookery preferably before the curd and whey separate. Cottage cheese is made from the curd of sour milk; clabber is the solid sour milk before it separates, and may be cooled and eaten with sugar, and sometimes with sweet or sour cream.

Buttermilk is the liquid left after butter has been made and removed from the cream, and is of about the same food value as skim milk.

Fortunate is the child who lives on a farm and can have all the milk desired. Milk, however, must be regarded as a very necessary food and should be used by every family, whether in town or country. It is poor economy to reduce the amount of milk purchased. Some other food could be better spared.

LABORATORY EXERCISES

MILK

WHITE SAUCE

White sauce is made by combining a liquid, a fat, and a thickening agent. Cream sauces and gravies are examples of white sauce. White sauce is of different thicknesses, according to its use. The following are the general proportions for white sauce:

No. 1 White Sauce or Thin White Sauce

1 c. liquid 1 tbsp. fat 1 tbsp. flour

Used for cream soups and certain sauces.

No. 2 White Sauce or Medium White Sauce

1 c. liquid 1 tbsp. fat 2 tbsp. flour

Used for vegetables, gravies and sauces.

No. 3 White Sauce or Thick White Sauce

1 c. liquid 2 tbsp. fat 3 tbsp. flour

Used for thick sauces, creamed oysters.

No. 4 White Sauce or Very Thick White Sauce

1 c. liquid 3 tbsp. fat 4 tbsp. flour

Used for croquettes.

There are three ways of combining the ingredients in making white sauces:

Method No. 1. Heat part of the milk in double-boiler; mix the remaining milk with the flour, and add gradually to the heated milk, stirring thoroughly; add the fat just before removing from the fire. Cook twenty to thirty minutes in the double-boiler, stirring occasionally.

Method No. 2. Heat milk in double-boiler; mix into a paste the fat and the flour; add to the heated milk, stirring until no lumps are present; cook twenty to thirty minutes.

Method No. 3. This method is often used in making

gravies. Heat the fat slowly; add the flour, and stir until a smooth paste is formed; add the milk, stirring constantly to prevent lumping. Cook six to ten minutes.

CREAM TOAST

1 tbsp. butter
1 tbsp. flour
1 c. milk or cream
¼ tsp. salt
4 slices bread

Make white sauce from the first four ingredients. While it is cooking make the toast, being careful not to burn the bread. Dip each piece in the white sauce, place in a warm dish and pour on the remaining white sauce. Serve in warmed dishes.

TOMATO TOAST

⅔ c. strained tomato juice
1 tbsp. flour
1 tbsp. butter
1 c. milk
Salt and pepper to taste

Make a white sauce of the milk, flour, and butter. Heat the tomato juice. Pour the tomato juice *very* slowly into the hot white sauce, stirring all the time, so that the acid in the tomato will not curdle the milk.

Pour the hot mixture over thin slices of buttered toast.

For what meal could this dish be served? What foods could be served with it?

REVIEW QUESTIONS

1. What is clean milk?
2. Why is it necessary to use clean milk?
3. What is Pasteurized milk? Sterilized milk? Certified milk?
4. Can either of these be purchased in your neighborhood? Where?
5. What is the price of milk per quart? What is the price of one pint of cream? Of one half pint?
6. Can skim milk be purchased from your dairy man? Compare the price of this with the price of whole milk.
7. In what ways may skim milk be used?
8. How should milk be cared for in the home?

9. What is condensed milk?
10. Does your grocer sell condensed milk? What does it cost per can? How much does the can contain?
11. Is milk a valuable food? Why?
12. For what food may milk be substituted?
13. How is butter made?
14. What butter substitutes are sold in the local stores?
15. How should butter substitutes be used?
16. How may buttermilk be used in cookery?

CEREALS

Cereals are derived from the seeds or grain of certain cultivated grasses. The most commonly used are corn, oats, wheat, barley, rye, buckwheat, and rice. From these are made many different kinds of flour, meal, and breakfast foods. Cereals furnish nearly one third of our food in this country.

Cereals are very valuable as food because they contain all the foodstuffs. Carbohydrates are found in the largest amount. Carbohydrates in food are found mainly in three forms: (1) starch, (2) sugar, and (3) cellulose. Starch and cellulose are the forms found in cereals.

The grain is made up of cells, the walls of which are of cellulose, and inside is the starch. Cellulose is not easily digested and is of practically no value, but it is useful to the body by furnishing "bulk" which causes the food to pass through the digestive system in a better and easier way.

Bran is the outer covering of such grains as wheat, oats, barley, or rye. Bran is largely cellulose, but in the bran layers is most of the mineral matter found in the cereals. Many of our breakfast cereals have the bran removed; in such cereals as cracked wheat or cracked oats the bran is left.

Cereals also contain protein and vitamins.

When the chemist divides a cereal into its parts he finds 65 to 75 per cent of carbohydrates, 10 to 12 per cent of protein, 2 to 8 per cent of fat, about 2 per cent of mineral matter and 10 to 12 per cent of water.

Cereals used for breakfast foods may be purchased at the stores in sealed packages, or in bulk by the pound. Those in packages are usually the cleaner but are more expensive.

We can buy ready prepared breakfast foods, such as cornflakes, puffed cereals, and shredded wheat. There are some cereals that are partially cooked, such as rolled oats, which have been steamed to soften the grains, then rolled, and which must be cooked again before eating; and there are other cereals that are not cooked at all in preparation for the market, such as cracked oats or wheat, and these are prepared for eating by long, slow cooking.

The prepared breakfast foods cost more per pound than those which must be cooked. A serving of a cooked breakfast food, such as oatmeal, furnishes more food value than a serving of a prepared breakfast food, such as puffed wheat, because the oatmeal weighs more.

Cereals do not keep well and it is not wise to buy them in large quantities, even though the price may be lower when bought in that way.

Cereals are cooked for three reasons: (1) to soften the cellulose, (2) to cause the starch grains to swell and burst, and (3) to make the taste better. In cooking cereals a fireless cooker may be used.

When cereals are cooked on the stove, always use a double-boiler. This is to prevent burning.

Left-over cereal, such as oatmeal, cream of wheat, or wheatena, may be packed in molds, and, when cold, removed from the molds and served with sugar and cream; or the cold cereal may be molded in a bread

pan, cut in slices, and sautéed in fat; cold cereals may also be used in croquettes.

HOME PROBLEMS AND QUESTIONS

Make a list of the cereals grown in this region. Which are the most common?

Make a list of the prepared cereals that can be purchased at the grocery: (*a*) those ready to eat; (*b*) those partially cooked.

Make a list of the cereals to be cooked.

What is the cost of rolled oats by the pound when sold in bulk? What is the cost per box for rolled oats? Read the label on the box to find what amount of oats the box contains. Compare the price of that in the box and that in bulk.

Should one eat a large amount of sugar on cereals? Why? In what other ways than with sugar may cereals be sweetened?

Which cereals do you like best for breakfast? Are these the ones that furnish the greatest food value?

If you are overweight, which cereals would be best for you to eat? If you are underweight?

LABORATORY EXERCISES

BREAKFAST CEREALS

CREAM OF WHEAT WITH DATES

2 tbsp. cream of wheat	$\frac{1}{6}$ tsp. salt
$1\frac{1}{4}$ c. water	4 to 6 dates

Heat water to boiling-point, add salt, stir in cream of wheat gradually. Cook about thirty minutes in double-boiler. When the cooking is about half done, add the dates, which have been cut into fine pieces.

PREPARED CEREALS

Place cereal on pan and heat in oven until crisp. Serve with fruit if desired. Milk or cream may be used with a cereal. Sometimes hot milk is poured over shredded wheat before serving.

Make a breakfast menu for yourself, in which each of the following breakfast cereals may be used, to make a well-balanced and pleasing breakfast: (1) oatmeal, (2) cream of wheat with dates, and (3) shredded wheat biscuit.

What other cooked breakfast foods have you eaten besides those that have been cooked in the laboratory?

REVIEW QUESTIONS

1. Why are cereals valuable as food?
2. Name breakfast foods containing the bran from the cereal.
3. Into what three groups may we classify breakfast foods made from cereals.
4. When you are underweight, why is it better to eat oatmeal or cracked wheat often for breakfast than to eat puffed wheat or corn flakes always?
5. Why are cereals cooked?
6. How may left-over breakfast cereals be used?

BREAD

In any menu we usually like bread in some form. Bread is another way of serving cereals, because all the flours and meals from which bread is made are prepared from cereals. The cereal used most commonly in making bread is wheat. The product made from wheat and used in bread is called flour. There are many different brands of wheat flour and these will make different kinds of bread. The flours are not alike because they are made from different kinds of wheat and by different processes. A great deal of our flour comes from the Northwestern States and is made from wheat sown in the spring and called hard-wheat flour. Wheat

grown in the Central States is usually sown in the fall and the flour made from it is called soft-wheat flour. Both can be used in bread-making.

Flour that is to be used for bread-making should be creamy in color, rather gritty in feel, and if pressed in the hand should fall apart when released. Flour may be purchased by the barrel, by the sack, or by the pound. It is cheaper when purchased in quantity, if

Equipment Needed for Bread-making

the housekeeper has a suitable place for storing a large amount. Flour must be kept in a clean dry place and in a well-covered container. A metal-lined container is preferable to one of wood because it can be more thoroughly cleaned.

Whole-wheat flour and Graham flour are types of wheat flour used for bread-making; these contain bran (the outer covering of the wheat grain) and other parts of the grain not found in white flour. These are valuable in the diet on account of the mineral matter and vitamins they contain, and, because they contain bran, are useful for their laxative properties. Whole

wheat and Graham bread are good foods for any one troubled with constipation.

The material in flour that is important in bread-making is the gluten, which is a form of protein that when mixed with water forms an elastic mass. It is the gluten that makes it possible to stretch and pull the dough without its breaking apart.

A Bread-mixer

Useful when several loaves of bread are to be made at one time

Yeast is one of the important materials used when light bread is made from wheat flour. It is the yeast that makes the dough rise and become light. Yeast, as it is used in bread, is made up of a large number of tiny plants, each too small to be seen by the naked eye. Under a powerful microscope they appear as little cell-like plants. When the plants are put into bread dough they find food material and moisture in the flour and other ingredients, and begin to grow and produce more cells. During this growing process a gas is formed which is called carbon dioxide. This gas stretches the gluten in the bread dough and causes the whole mass to rise. Alcohol, also, is produced during the growth of the yeast plant, but both the gas and the alcohol pass out of the bread during baking.

The yeast plant, in order to grow properly, must have (1) food and (2) moisture, both found in the dough, and (3) warmth, obtained by keeping the dough in a

warm place. The yeast plant is like all other plants in that it will be killed if it gets too hot. A cold temperature does not kill the plants, but they will not grow when cold.

Yeast may be purchased at the store in dry yeast cakes or in the form of compressed yeast. In the dry yeast the plants are mixed with meal, then dried, and wrapped for sale. The compressed yeast cake contains growing plants with enough food and moisture to permit growth for a few days. It cannot be kept long, however, and usually is purchased fresh for each baking.

Liquid yeast is a third form in which yeast is kept, and is sometimes called "beer yeast" or "starter." It contains the active growing plants and, in a cool place, can be kept for several days.

LABORATORY EXERCISES

Experiment: Make a stiff dough by mixing 4 tbsp. bread flour with 1 tbsp. water. Knead it well; let stand 30 minutes. Then knead it in the palm of one hand, under running water or in bowls of water, changing the water until it is no longer milky in appearance. What you have left is the gluten. Try stretching it. Shape it into a ball and put on baking sheet or pan and place in hot oven. What happens?

YEAST BREAD

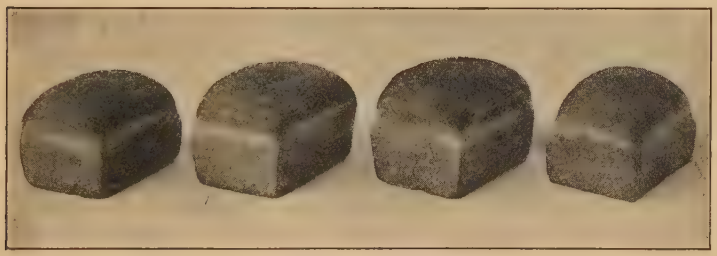
Bread is made in two ways: (1) by the "long process", in which a sponge is used, and this sponge is allowed to stand, usually overnight, before being made into dough, and (2) by the "short process", in which no sponge is used, but the dough is made at first. The second is the more modern method, and is popular because it requires much less time for making bread than the "long process." "Short-process" bread is most easily made by using compressed yeast.

RECIPE FOR ONE LOAF OF BREAD

1 c. liquid (milk or water, or the two mixed)
1 tsp. salt
1 tbsp. fat
1 tbsp. sugar
3 c. flour (about)
1 compressed yeast cake

The large amount of yeast is used in order that the bread may be made and baked in two or three hours. At home, one cake of yeast would do for three or four loaves of bread.

Place the salt, sugar, and fat in a mixing-bowl. Scald the liquid and pour over the ingredients in the mixing-bowl.



GOOD LOAVES OF BREAD

Let stand until lukewarm. While this is cooling, place the yeast in 2 tbsp. of lukewarm water to soften. Add this to the lukewarm mixture in the bowl. Stir thoroughly. Sift flour into the liquid mixture gradually, stirring thoroughly. As soon as it is possible to knead the dough without having it stick to the fingers, place it on a floured bread-board and knead until it is smooth in appearance and elastic to touch. Clean out the mixing-bowl, grease, place dough in bowl. Cover with a lid. Set mixing-bowl in a dishpan half full of lukewarm water; put in a warm, but not hot, place. If bread is made in hot weather the mixing-bowl need not be placed in the water. Bread dough kept at 80° to 86° F. rises best. Use a thermometer to test the dough. Experienced bread-makers can tell by the " feel " of the dough whether it is warm enough.

When the dough has doubled in size, knead again, adding no flour except what is needed on the board to keep the dough

from sticking. Shape into a loaf and place in a well greased bread-pan. Grease the pan by using a piece of oil paper on which has been placed a little fat, or use a brush made for the purpose. Cover the pan and set where the proper temperature for rising may be maintained. When the loaf is doubled in size, place in an oven heated to 400° or 425° F. Gradually lower the temperature to 380° F. Use an oven thermometer. The loaves should be turned around in the oven once or twice during the first few minutes of baking, so that the shape of the loaf will be good. No brown crust should form on the bread until the first ten or fifteen minutes. Bake one hour.

Remove bread from pan and place it, uncovered, on a bread-rack to cool; or place loaf against pan in such a way that no side touches a flat surface.

OTHER WORK WITH BREAD

While bread is baking, score it, using the score card given in the next section.

A lesson in kneading bread might be given, using one large portion of dough which may be prepared before the class assembles.

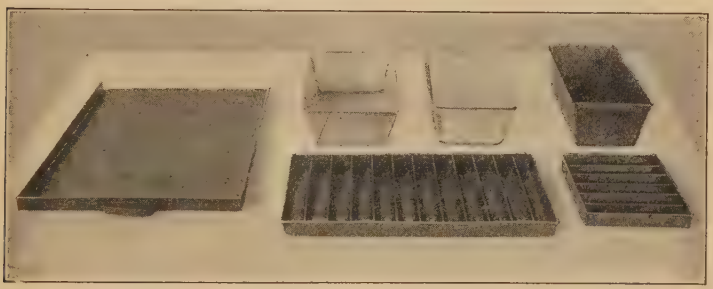
If there is a bread-mixer in the equipment, examine it. Perhaps there will be dough set to rise in it before the class begins, so that the kneading may be done by the class.

REVIEW QUESTIONS

1. What kinds of wheat flour are used for bread-making?
2. State the necessary qualities of white flour that is good to use for bread-making.
3. How is bread flour purchased? What is the price of one pound of flour in bulk? Of a 25-lb. sack? Of a 50-lb. sack?
4. What is gluten? How is it valuable in bread-making?
5. What is yeast?
6. In what forms do we have yeast for bread-making?
7. How does yeast make dough rise?
8. Would yeast grow if placed in water alone? Why?
9. What effect does a hot temperature have on yeast? A cold temperature? When does this have much to do with bread-making?
10. From what section of the country does a great deal of flour come?

BREAD (*Continued*)

Bread should be thoroughly baked, because during the baking process the yeast plant and other bacteria present are killed, and other changes also take place that make the bread more easily digested. It is better to bake one loaf in a pan instead of two or three or four loaves together in a larger pan.



Bread Pans, Bread-stick Pans and Baking Sheet

Bread that is well baked is an even golden brown all over; and when the bread is twenty-four hours old the crumb from the middle of the loaf will crumble and not form "dough-balls" when rubbed between the fingers. Bread that has just been baked is hard to digest because it forms a pasty mass in the mouth and is not chewed so thoroughly as it should be. It is better for use after standing twenty-four hours.

Bread should be kept in a metal container rather than in a wooden or earthenware jar. The container should be washed and scalded often with boiling water, and may be placed in the sun to dry thoroughly. Scalding water and sunshine will kill any bacteria that may be in the box which would cause the bread to spoil. Bread should not be wrapped in a cloth while warm because this is apt to spoil the flavor.

A great deal of baker's bread is now used, and in almost any locality good bread of this kind can be obtained. The large modern bakeries make good clean bread. When we buy bread from the store it is well to know whence it comes and to find out if it has been properly made and cared for. A great deal of bread is

A Bread-judging Team

They are judging bread with a score card. Note the emblem of the Four H Club on the headband

wrapped in paper before it leaves the bakery and this is usually the cleanest bread that can be bought, as all dust, flies, dirty hands, and dirty clothes have been kept away from it.

A slice of baker's bread usually does not contain so much food value as a slice of home-made bread of the same size, because it does not weigh so much and therefore contains less flour and probably less milk and fat.

A girl should know how to make good bread, even though the bread used in her home is bought from the

baker. The United States government considers bread-making such an important thing for a girl to know that the Department of Agriculture has organized bread clubs in all sections of the country. The girls who belong to these clubs learn to make bread by doing it many times and then entering a loaf to be judged in a contest with other girls. To decide just how well she has learned to do the work, the judge uses the Standard Score Card for Bread that has been adopted by the United States Department of Agriculture.

SCORE CARD[1]

1. General appearance:	
Shape	5
Smoothness of crust	5
Depth and evenness of color	5
2. Lightness	10
3. Crust:	
Thickness	5
Quality (crispness and elasticity)	5
4. Crumb:	
Color	10
Texture (size and uniformity of cells, thickness of cell walls)	15
Elasticity (softness and springiness)	10
5. Flavor (taste and odor)	30
Total	100

One of the favorite ways of preparing light bread for breakfast is to make it into toast. Toast is easier to digest than white bread, when it is properly made, because there are certain changes that take place in the starch during the toasting. In making dry toast, the slice should be dried out and evenly browned on both sides.

[1] From Farmers' Bulletin 1136, "Baking in the Home", Superintendent of Documents, Washington, D. C.

All clean scraps of bread and toast should be dried and made into crumbs; these can be used in many ways.

Waffles, batter cakes, muffins, pop-overs, and biscuits may be substituted for yeast bread in the breakfast plan.

In some parts of the United States hot breads are used at every meal, and most of the breads used are quick breads. Quick breads are made to rise in a different way from yeast breads. We will study in another lesson the methods used.

LABORATORY EXERCISES

ROLLS AND BATTER CAKES

Experiment: Mix 1 tbsp. flour, 1 tbsp. sugar, $\frac{3}{4}$ cake compressed yeast, 5 tbsp. cold water to a smooth paste. Divide into three parts, place each in a tumbler and label **1, 2,** and 3.

(*a*) Fill No. 1 with boiling water, place glass in bowl of boiling water, let stand in a hot place fifteen minutes.

(*b*) Half fill No. 2 with lukewarm water, let it stand fifteen minutes in a temperature of 80° to 90° F.

(*c*) Fill No. 3 with cold water, place it in a bowl of cracked ice, or outside the window if the weather is freezing, for fifteen minutes.

Observe the foam on top of each glass — the more foam the more active is the yeast.

Which has produced the most foam? What causes the foam? What does this teach about the temperature for bread-making?

(*d*) Place $\frac{1}{4}$ yeast cake in 2 tbsp. water. Let it stand fifteen minutes. Has any foam come to the top? Why?

(*e*) Let No. 3 stand in a temperature of 80° to 90° F. for one hour. Has any change occurred in contents of glass? Why?

(*f*) Remove No. 1 from bowl of boiling water, let it stand in a lukewarm place for one hour. Has any change occurred in contents of glass? Why?

PARKER HOUSE ROLLS

1 c. scalded milk
1 tbsp. butter
1 tbsp. sugar
½ tsp. salt
½ yeast cake dissolved in ¼ c. lukewarm water
3 c. flour (about)

Pour scalded milk over salt, butter, and sugar. When mixture is lukewarm, add yeast and one half the flour. Beat until smooth; cover, and let rise. Stir in flour until dough is stiff enough to handle. Knead until smooth and elastic.

LIGHT ROLLS, CLOVER-LEAF ROLLS, PARKER HOUSE ROLLS, AND BREAD-STICKS, ALL MADE FROM BREAD DOUGH

Let rise again, then turn out on bread-board, roll and pat the mixture until it is one third inch in thickness. Cut with biscuit-cutter. With the handle of a knife, which has been dipped in flour, make a crease through the middle of each piece. Brush over each piece with butter; fold, and press edges together. Place in greased pan, one inch apart, cover and let rise. Bake fifteen to twenty minutes in a hot oven, 400°–450° F.

The long process for bread-making is used in making these rolls. In what other ways may bread dough be used? Perhaps the class can bring some good recipes from home.

BATTER CAKES

¾ c. milk
1 egg
1 tbsp. melted butter
¼ tsp. salt
2 tsp. baking powder
1 c. flour (about)

Add the well beaten egg to the milk. Mix together the dry ingredients. Sift slowly into egg and milk mixture, beating thoroughly. Drop by spoonfuls on a hot greased griddle. Cook on one side until top is puffed and full of bubbles and edges are crisp. Turn with a spatula or pancake-turner, and cook on the other side. Serve immediately on warmed plates.

Batter cakes are also known as griddlecakes.

Of what material are griddles made? What do they cost? How should they be cared for?

Perhaps some of the class will make waffles instead of the batter cakes. Some one will have a good recipe, or one may be found in the cook book.

EGGS

Hen, duck, goose, turkey, and guinea-fowl eggs are used for food in this country. The hen's egg is the one most commonly found in the market. Perhaps the members of this class who live in the country have used some other kinds of eggs.

The egg has in it food for the baby chick, and for that reason contains all the foodstuffs required for its growth. When the chemist divides the egg into its parts he finds about 12 per cent of protein, about 9 per cent of fat and, in addition, water and mineral matter. Eggs also contain Vitamins A and D. Eggs may replace meat in the diet because they contain a large amount of protein, which is easily digested and used in the body. Eggs are especially good for children to eat in place of meat.

When buying eggs in the market it is often difficult to get them fresh. A fresh egg need not be newly laid, but must be in good condition for human food, although it may be several days old. Eggs that have been treated or stored are not fresh eggs.

Eggs cannot be kept in good condition for a long

period unless some method of preserving them is used. The shell of the egg is porous and allows bacteria from the air to pass through, thereby causing the egg to spoil. The home methods found to be best for preserving eggs are by the use of water glass or lime water. These materials may be purchased from the druggist and should be combined with clean boiled water. After the eggs are placed in the liquid, the container should be kept in a cool place. Eggs that are laid in April, May, or June are the best for preservation, and are also lower in price than at any other season. Large numbers of eggs are put in cold storage every year and these are the eggs that are sold during the winter as "storage" or "packed" eggs.

Eggs are usually sold by the dozen, but, as they vary greatly in size and weight, it would be better if they were sold by weight.

The color of the shell has nothing to do with the food value of an egg. A fresh egg has a slightly rough shell. To be sure an egg is fresh, it may be "candled." Candling is done by making a funnel of cardboard or other material, one end of which fits tightly around the egg; place the egg against this end, and hold it between you and a bright light; in looking at the egg through this funnel, a fresh egg looks clear, while stale eggs are cloudy or dark.

Eggs should be kept in a cool place, preferably in the lower part of the refrigerator. Since eggshells are porous, eggs absorb odors readily, and should never be kept where there are foods with strong odors. Uncooked egg yolks which are left, when only a part of the egg is used, may be kept for some time in the refrigerator by covering with cold water; the white of an egg keeps when tightly covered and put in a cold place. The shell of an egg should not be washed

until it is to be used, since washing the shell makes it more porous.

Eggs that are "soft-cooked", at a temperature below that of boiling water, are most easily and quickly digested. "Hard-cooked" or hard-boiled eggs are thoroughly digested when not eaten hurriedly, and are more easily digested when cooked in water at a temperature below the boiling-point.

STORING EGGS AT HOME [1]

Water Glass Method. Add one quart of water glass to 10 quarts of clean, boiled soft water, that has been allowed to cool; stir thoroughly. Buy only the **best grade** of water glass; it should be of the consistency of molasses. Eggs may be added to the solution as gathered. Keep in a stone jar in a cool place. Do not use the solution the second year. The water glass may be obtained in either dry or liquid form, and dissolved in either hard or soft water.

Vessels to Use. Use earthenware, glass, or wooden containers but not metal. Clean by thorough scalding. The table below shows the number of eggs which can be packed in jars of different sizes and the amount of liquid necessary.

SIZE OF JAR AND SOLUTION NECESSARY FOR STORING EGGS

SIZE OF JAR	EGG CAPACITY	SOLUTION [2] NECESSARY
2 gallon jar	65–80 eggs	7½ pints
5 gallon jar	160–200 eggs	18½ pints
10 gallon jar	320–400 eggs	36½ pints

Earthenware jars usually cost 10 cents a gallon when over five gallons in size.

[1] From "Purdue Handbook of Agricultural Facts", published by the Agricultural Experiment Station, Purdue University, LaFayette, Indiana.

[2] Solution means water and water glass combined.

LABORATORY EXERCISES

EGGS FOR BREAKFAST?

SOFT-COOKED EGGS

Never cook an egg at boiling temperature, as this makes the white tough. Place one egg in a pint of boiling water in the top part of the double-boiler. Place boiling water in lower part of double-boiler. Remove from fire and set in warm place. Cook for the length of time desired — five minutes for a soft-cooked egg, seven to ten for a medium-cooked egg. If the eggs have come out of the refrigerator and are very cold it will require a longer time to cook them.

How shall soft-cooked eggs be served for breakfast?

HARD-COOKED EGGS

Place one egg in a pint of boiling water, remove from fire, cover tightly; set in a warm place forty-five minutes to one hour. Using a double-boiler for this is a good method.

Place one egg in a pint of boiling water. Boil for twenty minutes.

When the two eggs are done, examine the whites. Which is the more tender?

What are some of the ways in which to use hard-cooked eggs?

POACHED EGGS

Have a frying-pan two thirds full of water at simmering point, to which salt has been added. In this may be placed muffin rings if they are available. Break each egg separately, pour carefully into muffin ring or water. Do not allow the water to boil. When the egg-white is firm, remove eggs from water, using a pancake-turner. Place each egg on a piece of buttered toast arranged on a warmed platter.

SCRAMBLED EGGS

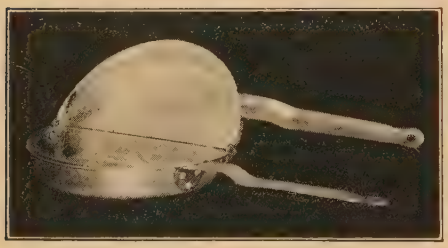
3 eggs $\frac{1}{16}$ tsp. pepper
$\frac{1}{4}$ c. milk $\frac{1}{8}$ tsp. salt
1 tbsp. butter

Beat eggs slightly, add milk and seasoning. Melt butter in top of double-boiler, turn in mixture and cook very slowly, stirring often until white is set. Serve on warmed platter. Bits of chopped ham or other meat may be added if desired.

PUFFY OMELET

4 eggs	1 tsp. salt
2 tbsp. milk	Pepper

Separate the yolks and whites of the eggs. Beat the yolks of the eggs until "creamy" and add the milk, salt, and pepper. Beat the whites until they are stiff. Pour the yolks over the whites and fold together carefully. Place in a frying-pan one tablespoon of butter. When it is melted pour in the omelet. Cook on top of the stove until the omelet is slightly browned on the bottom. Set in oven and bake slowly until omelet is "set" and browned on the top. Have ready a warmed platter. Loosen the omelet from the pan with a spatula. Slide it halfway from the pan to the platter and then fold the half of the omelet in the frying-pan over the half on the platter. Serve.



AN OMELET PAN

Grated cheese, minced ham, or chopped parsley may be sprinkled over the omelet before it is folded, in order to vary the flavor.

An omelet-pan may be used in place of the regular frying-pan in making the omelet.

REVIEW QUESTIONS

1. What kinds of eggs are used for food in this country?
2. What foodstuffs does an egg contain?
3. What food may eggs replace in a meal? Why?

4. What other food have we studied which is similar in food value to eggs?

5. What is a fresh egg? A packed egg?

6. Have you ever seen eggs being packed at home for winter use? How was it done?

7. What is the price per dozen for packed eggs? For fresh eggs?

8. Weigh three small eggs, then weigh three large eggs. What is the difference in weight per dozen? What does this prove about purchasing eggs by count or by weight?

THE DINING ROOM

The dining room should be a light, cheerful room, situated so that the sunlight reaches it at some time every day, preferably in the morning. This room should be large enough to permit easy passing behind the chairs when persons are seated around the table.

The walls should be finished in light colors rather than dark, which tend to make the room appear gloomy.

Walls finished in oil paint are very desirable in a dining room. When walls are papered, a paper without design is a good selection; if a figured paper is used, one with a small conventionalized design should be selected; a two-tone paper may look well on the dining-room wall. In the house with ceilings of ordinary height, the wall finish may extend up to the angle made by the ceiling and the wall, and may be finished with a picture molding which matches the woodwork in the room. Plate rails are now seldom used in the best designed dining rooms.

The window curtains should be of a kind easily laundered, since draperies in a dining room are apt to hold dirt and odors and need frequent cleaning. Such materials as scrim, marquisette, voile, or net may be used for glass curtains (those next to the glass); cretonne, chintz, printed linen, Japanese toweling, and pongee may be used for over-draperies, or may be used

alone when it is not desirable to have draperies hung across the glass.

The floor is best made of hardwood, as a rug may then be used instead of a carpet. A dining-room floor would be more sanitary if no covering were used,

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A Breakfast Alcove

Used instead of a dining room. The table is set for breakfast. It is made attractive with the two potted plants and the hanging basket

but the noise made on a bare floor is annoying to many persons. Linoleum is sometimes used on floors in farmhouses, where hired men must have their meals in the dining room.

The furniture should be plain in design. Wood or cane-seated chairs are perhaps better to use than upholstered, because they are easier to keep clean. A

dining-table with a top having a waxed finish is much better than one highly varnished; and a table finished so that it is not affected by heat or water is desirable, since doilies are now so generally used.

The large pieces of furniture, such as the sideboard or serving-table, should be placed in the middle of the wall space against which they stand, and straight with the wall, never diagonally across the corner of a room. The dining-table should be in the middle of the room; especially is this important when there is a chandelier hung from the middle of the ceiling.

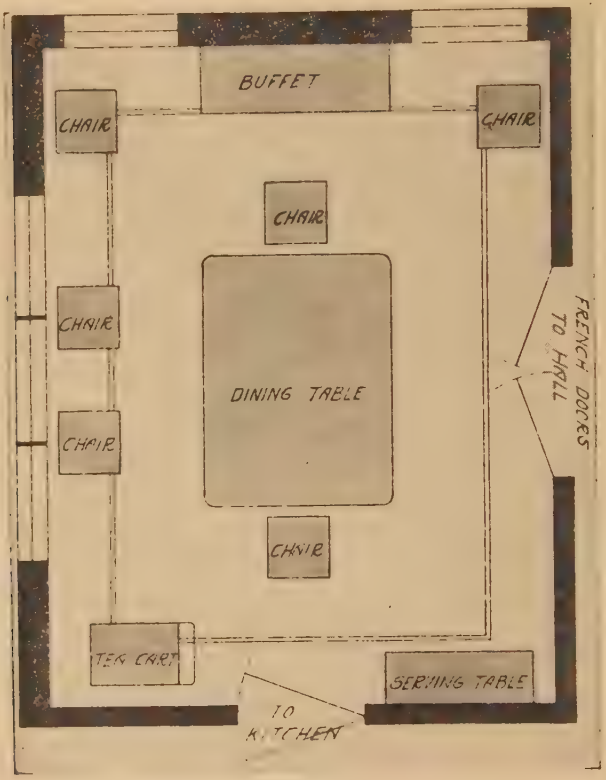
The top of the sideboard and serving-table should not be crowded with dishes of various kinds. A dining room is more pleasing with few pictures, or none at all, and with little bric-a-brac or few dishes used as decoration.

Pictures of dead game or fish are not desirable in a dining room; a landscape or a picture of a bowl of flowers would be a better selection. When figured wall paper is used, a dining room looks better without any pictures.

When buying a "set" of dishes it is best to select a style with simple decoration or without decoration. Large conspicuous designs and bright colors become tiresome when the dishes are used often. If an "open stock" pattern is selected, broken dishes may easily be replaced.

The knives, forks, and spoons used on a dining-table are called "flat silverware" and may be made of sterling (solid) silver or of plated silver. Many people cannot afford to buy sterling silver and use plated silverware, which wears well when of good quality. The best quality is "triple plate", but "double plate" and often "single plate" are used. Plain, simple patterns in flat silverware are to be preferred to elaborately decorated ones, because more easily cleaned; but very plain silver scratches easily.

Glassware used on the table may be made of pure lead glass or lime glass, the first being the best, because



A Floor Plan for the Dining Room

A good arrangement of the furnishings when the room is not in use. Note the battery (group) of windows on the side, and the two windows at the end, which furnish excellent light for the room

it is tough and wears well. Goblets or tumblers, sherbet glasses, or plates should be made of glass which is clear, free from bubbles or cloudiness, smooth, white, and transparent. Glassware may be cut or

etched for decoration. Pressed glassware is more commonly used because it is much less expensive than cut glass or etched glass and is almost as beautiful when well made. Colored glass is also used in making tableware.

Tablecloths and napkins are sold in "sets", when the pattern is the same in both. The best sets are made from linen damask, either a single or a double damask. Double damask is the best. Some linen damask is not bleached and may be purchased as "unbleached damask"; other kinds are partially bleached and are called "silver bleached" damask. Either silver bleached or unbleached damask costs less than the white damask of the same quality.

Cotton damask is a material made to imitate linen damask. It is much less expensive, but stains easily, soils more quickly, and is not so attractive in appearance as linen damask.

Luncheon sets of various types may be used instead of a tablecloth and are much easier to launder.

HOME PROBLEMS AND QUESTIONS

Collect pictures of dining-room furniture; of the interior of dining rooms. Bring them to class for discussion. Perhaps, if there is a furniture dealer in the community, you or the teacher can get furniture catalogues that will be good to study.

Which types of chairs are best for the dining room? Why? Do the chairs in the pictures seem too heavy to move about easily? Are they well braced? Observe whether they would be hard to dust.

What types of tables are best for the dining room? Why?

Which type of sideboard is best?

For what purpose is a side-table used? What is a buffet?

Have you ever seen painted furniture used? Where? When is it suitable in a dining room?

See if you can find samples of the kind of curtain material you think would be good for a dining room.

Find pictures illustrating different methods of hanging draperies at dining-room windows; discuss the rooms for which these are suitable.

Select from a color card or a sample book of wall paper the color you would like to use on your dining-room walls. What color and finish can be used on the woodwork with such walls?

What kind of floor-covering would you like?

The floor should be the darkest part of the room, the walls lighter, and the ceiling the lightest part of the room. Does your color scheme meet this requirement?

You may like to mount on sheets of paper pictures of the furniture you would select to use in your dining room; if you have a sample of curtain material, rug and wall paper that you like, you can mount these. Then make a floor-plan of your room, showing the size of the room, the windows, the doors, and where the china closet is placed. Arrange the furniture in the room. On another sheet make a list of the prices of all the furnishings in the dining room. What is the total cost of furnishing? Tie these sheets together and make a cover for them.

LABORATORY EXERCISES

MEAT DISHES FOR BREAKFAST

BROILED BACON

Place in a hot frying-pan thin slices of bacon from which the rind has been removed. Turn several times during the

cooking. When the bacon is crisp, not burned, drain from the fat carefully and serve on a warmed platter.

FLAT SILVERWARE OF GOOD DESIGN

FROM LEFT TO RIGHT: A BERRY SPOON, TWO SALAD FORKS, A COLD-MEAT FORK, TWO DINNER FORKS AND A SALAD-SERVER. THE COLD-MEAT FORK WOULD BE THE MOST DIFFICULT TO CLEAN

Bacon may be purchased by the piece, sliced in bulk, or sliced and packed in sealed containers. In which form is bacon the cheapest by the pound? Why?

CREAMED DRIED BEEF

Place two tablespoons of fat in a small frying-pan; when it is melted, add about three slices of dried beef torn in pieces. Stir about three minutes, add one cup of milk. Mix thoroughly one tablespoon of flour with two tablespoons of milk; add slowly to the scalding hot milk. Stir to prevent lumping. Cook slowly five to ten minutes. Serve on toast arranged on a warmed platter.

In making this white sauce, why is the flour mixed with milk instead of with fat?

How is dried beef made? Perhaps the butcher will tell you. What does it cost per pound?

What are some other meat dishes that would be good for breakfast? If you have time, try one of these.

MINCED MEAT CREAMED

Put cold left-over meat through the meat grinder. Place in a saucepan with water or gravy enough to cover it, add salt and pepper to taste, simmer until thoroughly heated. Add a lump of butter if water, instead of gravy, has been used. Serve on toast.

In what type of breakfast menu may creamed meat be served?

Suggest other meat dishes suitable for breakfast when meat is to be used.

CARE OF THE DINING ROOM

Good equipment, including labor-saving devices for housework, will save the housekeeper a great deal of time and energy. Good equipment for cleaning should include good brooms, dust mops, a wet mop with wringer, dust cloths, polishing cloths, cleaning powders, soaps, brushes, plenty of clean cloths, and a suction-sweeper if there are many large rugs or carpets to keep in order. A cupboard or closet in which all this equipment may be kept is a great convenience.

The dining room needs some cleaning every day. Hardwood or linoleum-covered floors should be cleaned with the dust mop. The rugs should have the carpet-sweeper run over them after each meal for the purpose of removing all crumbs. The furniture should be dusted if necessary.

After each meal everything should be removed from the dining-table, which should be crumbed with a soft flannelette cloth. A doily should then be placed in the center of the table, on which may be arranged a

TABLE LAID WITH DOILIES MADE FROM HEAVY ART LINEN

bowl of flowers or a basket of fruit or a growing plant in a decorated pot or in a pot covered with crêpe paper. A dining room never looks in order when the table is left partially set between meals or when a white cloth is spread over the partially set table.

Often china closets with glass in the doors are built into the dining-room walls, and these add a very attractive feature to the room, provided the dishes in them are kept in order. The "everyday" dishes will usually not be kept in this cupboard, but rather the "best dishes", or odd dishes which are pleasing when viewed through the glass. Dishes must be removed from the china closet and the closet cleaned whenever the shelves become dusty. Perhaps some of the dishes may need washing also.

The dining room should be given a thorough cleaning once a week.

Silverware should be cleaned whenever it becomes tarnished. There are two methods which may be used in doing this work. (1) Apply silver polish or paste, following the directions given on the box or bottle in which it is purchased. Whiting may be used instead of silver polish, and should be applied with a damp flannelette cloth, rubbing until the tarnish is removed; let the whiting dry on the silverware, then rub with a clean flannelette cloth. Flat silverware or silver dishes in which food is to be served should be scalded in boiling water and wiped dry. (2) A "silver-cleaning pan" may be used, following the directions which come with the pan. This is a very easy method.

Silverware is scratched less if it is washed carefully after each using. Never mix the silverware with the cooking knives, forks, or spoons. Separate the silver knives, forks, and spoons; wash each separately; lay on a dry tea towel and wipe each piece separately.

Lay each piece carefully in the drawer where the silverware is kept, using a separate compartment for each kind.

Table linen should be changed often so that it never becomes badly soiled, since the rubbing necessary to clean very soiled linen injures the fabric. Remove any stains on the table linen before washing (see section on Removing Stains). Soak in warm water for one half hour; wash in hot soapsuds, using the electric washer if there is one in the laundry equipment. Table linen does not need hard rubbing, because it is rarely very dirty. Boil the table linen in soapsuds. Rinse it very thoroughly and put it through a blue water which is not too deep in color. Good linen damask does not need starching; poor linen will look better if rinsed in a thin cooked-starch water before drying.

Table linen should be stretched into shape and hung on the line with the middle lengthwise of the cloth over the line. It may be taken from the line when partially dry and ironed at once. When a tablecloth is to be sprinkled it must be dampened evenly and should be quite damp to iron well. When taking the dry cloth from the line fold it carefully, since this makes the ironing easier.

A tablecloth should be ironed on the wrong side until partially dry, then turned and ironed on the right side until thoroughly dry. It requires very careful ironing to make a cloth smooth, so that it will lie flat on the table. Tablecloths are usually folded with three creases lengthwise, the tops of the three creases being on top of the cloth. Roll the ironed cloth around a covered cardboard roll made for the purpose; place in a drawer in such a way that the tablecloth does not touch the ends of the drawer. Napkins are folded square, with either two or three creases; only one fold is used

for luncheon napkins, and occasionally the napkin, after being folded square, is folded diagonally to make a triangle.

Ironing Napkins on a Power or Flat Ironer, Sometimes Called a Mangle

This machine is a great help in ironing table linen or bed linen

Table doilies are washed in the same manner as tablecloths, unless the doilies are of colored material; then they should not be boiled. Embroidered doilies should never be starched, but should be ironed when

very wet, the doily being placed face down on a pad made for the purpose or on a clean cloth folded to make six or eight thicknesses.

HOME PROBLEMS AND QUESTIONS

In what sizes are napkins made? What is the price per dozen unhemmed? For finished napkins? At what season of the year may table linen be purchased at the lowest cost?

Have you seen any "silver-cleaning pans" advertised? What is the price of such a pan?

Make a list of the electric sweepers you have seen used or advertised. What is the price of a good sweeper? For what purposes are the attachments used?

Discuss the plans for a cleaning closet. How large should it be? How should the cleaning utensils be placed in the closets? Where should the closet be placed in the house to be most convenient?

TABLE MANNERS

No matter how educated or pleasing in character one may be, the impression made upon others is not good if one's manners are poor.

Certain rules for table behavior or manners have been adopted because they make the eating of the meal easier and more graceful, and the serving of it more convenient.

The following are a few rules that should be observed always when at the dining-table:

1. Always be prompt for meals.
2. Never go to the table unless hands and face are clean and the hair is in order.

3. Stand behind your chair until the hostess takes her seat.

4. The napkin should be laid across the lap without being entirely opened out. Never stick the corner inside the collar. If the napkin is to be used again, fold it neatly before leaving the table.

5. The knife should be held in the right hand and the fork in the left when they are used at the same time. Hold the knife and fork so that the end of the handle touches the palm of the hand. The point of the index-finger is on the top of the handle of the fork at the lower end, but not on the tines. The knife must be laid on the plate when not in use. Both knife and fork should be placed side by side on the plate when one has finished using them at the end of a course. The fork, when being used to carry food to the mouth, may be held in either hand, and may be held in much the same position as when used with the knife, or like a spoon.

CORRECT METHOD OF HOLDING THE KNIFE AND FORK WHEN CUTTING FOOD ON THE PLATE

6. The spoon should be held in the right hand, and such food as soup, tea, or coffee should be taken from the side of the spoon. A spoon used for stirring tea or coffee should be laid on the saucer after use and before drinking from the cup.

7. Always sit erect in the chair while eating. Keep the arms and elbows off the table.

8. Never eat hurriedly, and always eat without making any noise.

9. Do not talk when the mouth is full of food.

10. Ask politely for dishes to be passed, rather than reach across the table. Pass dishes to others at the table. Never take more than your share of any food that is passed.

11. Try never to spill food or to drop any on the tablecloth or doily.

12. Never complain about the food. If it is not the kind desired, it need not be eaten.

13. If it is necessary to leave the table before the others are ready, ask to be excused by the hostess.

The Serving-dish Should be Passed to the Left of the Person at the Table

14. Do not talk about disagreeable things during the meal.

15. Watch the hostess and follow her in using silverware or dishes, since it is her duty to be an example for others at the table.

HOME PROBLEMS AND QUESTIONS

The following breakfast will be served during the next laboratory period:

Orange	Toast
Oatmeal	Cocoa

Make a list of the dishes and silver that will be needed in setting the table and serving the meal.

Decide how much of each food will be required for serving the number who are to eat the meal.

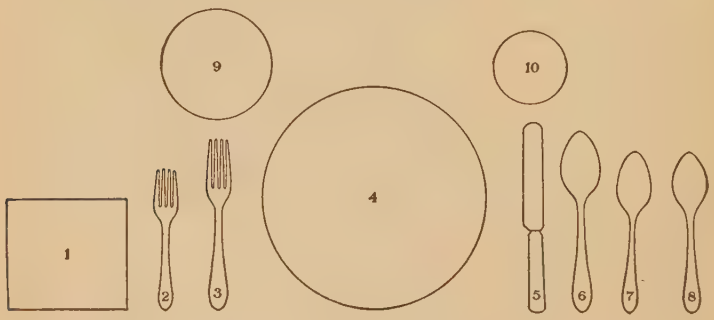
Decide the order of work for preparation of the meal — that is, which food must be put on to cook first, which second, and so forth.

What will the food cost for each person?

LABORATORY EXERCISES

SERVE A BREAKFAST

Setting the table: Place the table-pad or silence-cloth on the table. Over this lay the cloth, arranged straight and smooth. If a center doily is used, place this in the middle



ARRANGEMENT OF THE "COVER" FOR DINNER

1. NAPKIN. 2. SALAD FORK. 3. DINNER FORK. 4. DINNER PLATE. 5. DINNER KNIFE. 6. SOUP SPOON. 7. DESSERT OR SAUCE SPOON. 8. COFFEE SPOON. 9. BREAD-AND-BUTTER PLATE. 10. WATER GLASS

of the table. Doilies and table-runners may be used, instead of a tablecloth, for breakfast, luncheon, and supper. Asbestos pads should be placed under all hot dishes when doilies or runners are used on a polished table.

A cover means the space with the silver, glass, and china allowed for each person. Enough space must be allowed so that no one is crowded. Twenty-two inches is the least space that should be used.

At the center of each cover, place a plate, the kind depending on the meal that is served. For breakfast it will probably be the fruit-plate. At the right of the plate place the knife, with its sharp edge toward the plate and the end of the handle about one inch from the edge of the table. Next to the knife place the spoons, with the bowls up.

At the left of the plate, place the fork or forks with the tines up and the end of the handle about one inch from the edge of the table. To the left of the fork lay the neatly folded napkin.

At the end of the knife, place the glass, right side up. At the end of the forks, place the bread-and-butter plate.

If a butter-spreader is used, place this across the edge of the bread-and-butter plate, or on the table at the right of the plate.

When flowers are used they should be low, or not high enough to obstruct the view across the table.

The dishes from which foods are to be served should be placed conveniently for those doing the serving. Place the serving-spoons and the carving-knife and fork where they will be needed, but do not place them in the dishes before beginning the serving.

Cups and saucers, sugar-bowl and cream-pitcher, should be placed in front of the hostess, with the coffee-pot or teapot at her right.

The table should never look crowded with dishes. When the hostess is serving the meal, a tea-cart at her side may be used for holding dessert-dish, bread-plate, water-pitcher, and so forth.

Place the chairs so that the edge of the seat just touches the tablecloth, but does not keep it from hanging straight.

LABORATORY EXERCISES (Continued)

If there is a school laundry, practice work in laundering table linen may be given. If not, each girl may launder napkins and doilies at home, bringing to class a sample of the finished work.

Clean the silverware at school or at home, using one of the methods suggested.

How should cut glass or pressed glass with deep " cuts " be cleaned?

Clean the china closet, the silver and linen drawers.

Clean the dining room at school or at home. Discuss methods to be used for floor, rugs, furniture, woodwork, and walls.

STYLES OF SERVING

There are three methods of serving meals:

1. English, used in ordinary family service. Foods are served at the table by the host and hostess and other members of the family. The served dishes may be passed by the household helper, or passed from one person to another at the table. The hostess usually serves the soup, salad, and dessert; the host serves the meat and vegetables. This is the style of serving used in most American homes.

2. Russian, used for very formal meals. Each plate is served in the kitchen and placed in front of the guest by the household helpers; or the empty plates are placed before each guest and the serving-dishes are passed to each person by the household helper. No serving-dishes are placed on the table. This form of service is not practical for the ordinary family, because it requires more work than the English service.

3. Combination, or compromise, used for informal meals. This is a combination of the two other styles. For example, the soup or salad is served in the kitchen, and the meat and vegetables are served at the table.

"Dinner is Served"

The table is set for four people. The dessert is on the tea cart. The meat, vegetables, salad, bread and butter are on the table

Every hostess may follow her own ideas about serving, as far as details are concerned, but a few general rules should be followed:

1. Serving-dishes from which the guest is to serve himself must be passed to the left of the guest. Why?

2. Plates that have been served are placed in front of the guest from the left side.

3. Used plates are removed from the left side when it is possible to do it conveniently.

4. When removing dishes between the courses, use the following order: remove the dishes containing food, then the used dishes, next the clean dishes and silver that will not be needed further, then the crumbs from the cloth (if necessary). A table never looks attractive when dirty dishes from one course remain during the next course, and even at the most informal meals it is better to remove dishes between courses. This work may be done by the daughter. When the family is very small, sometimes the dirty dishes are placed on a side-table or tea-cart, from which the dessert is taken, thereby saving the housekeeper steps in serving.

5. In removing dishes from the table, when serving an informal meal, they may be placed on a hand-tray for carrying to the kitchen. Never "stack" dishes at the table or for removing from the table.

Set the table for breakfast. Practice serving.

If no dining-room furniture is available, the supply-table may be used. Perhaps dishes to use in setting the table may be borrowed until the school can get such equipment. If no other way is possible, let every member of the class arrange a cover at the laboratory desk, using laboratory dishes. This is never a desirable plan, however, because the equipment does not supply the best type of dishes nor the proper kind.

THE FIRST COURSE IS BEING REMOVED TO THE CART AND THE DESSERT IS BEING PASSED. BECAUSE THE TEA CART IS ALREADY FULL, THE GIRL AT THE LEFT IS EXCHANGING HER SALAD PLATE FOR HER DESSERT AND THE HOSTESS WILL SET THE SALAD PLATE IN THE SPOT WHERE THE DESSERT PLATE STOOD

LABORATORY EXERCISES

SERVE A BREAKFAST

Suggested Menu:	Orange	Toast
	Oatmeal	Cocoa

Would this type of breakfast suit every family? Why?
Review recipes.
Cook and serve meal.

Several lessons might be given on serving breakfasts.

Prepare and serve breakfast at home. Write a report of the work, stating methods used, menu, and time required. When you do this work again, by what methods can you shorten the time required for the work?

THE PLAN FOR SUPPER OR LUNCHEON

In some families the meal served at noon is called luncheon and is followed by dinner in the evening; in others, dinner is the meal served at noon, followed by supper in the evening. Luncheon and supper are simpler meals than dinner.

The plan varies greatly under different conditions, but the usual types of food served are meat or meat-substitute dishes, salads, vegetables, bread in some form, and perhaps a simple dessert or cake. "Quick breads" are often used for luncheon or supper.

Many consider a cream soup, a vegetable salad, bread, stewed fruit, and cookies a good combination for such a meal, while other families prefer a meat dish, a hot vegetable, and bread; still others may consider bread and milk a satisfactory menu. No family needs, in one meal, foods of all the types suggested.

Luncheon or supper is a meal for which it is convenient to use the "left-overs" in various ways. Bits of meat may be combined with other foods to make

attractive dishes. Small portions of vegetables may be made into salads or soups, or combined with meat. Sometimes a salad is made of left-over fruit, and used at the end of the meal in place of a dessert.

Some housekeepers are very wasteful in throwing into the garbage-can small bits of clean food that may be left from a meal. Often persons object to "left-overs", but this is usually the case when the housekeeper has not learned how to make them into dishes which are well flavored and pleasing in appearance.

When bits of meat are left from a meal they should be put in a covered container and placed in the ice-box or some other cool place. Vegetables with a strong flavor should be covered if put in the ice-box. All "left-over" food should be used promptly and not left to spoil.

The cost of food should be considered, and if anything can be saved by careful watching and planning it is a part of the housekeeper's business to do this.

There are several ways of reducing the amount of money to be spent for food: (1) buy the foods that are in season; (2) buy those which contain the greatest food value, these are not always the highest priced; (3) buy in quantity any foods that can be properly stored; (4) prepare and cook carefully, so that nothing shall be wasted; (5) save every part of the food that is fit for use.

LABORATORY EXERCISES

CREAM SOUPS

CREAM OF TOMATO SOUP

Make one cup of No. 1 White Sauce. Strain cooked tomatoes through a wire sieve, using one half cup of juice. Place tomato-juice in saucepan, heat, add one sixteenth

teaspoon soda. Add the heated tomato-juice to the white sauce. Re-heat and serve in warmed soup-plates.

Try mixing one tablespoon tomato-juice and one tablespoon of milk, and see what happens. The soda prevents this action, which is the curdling of the milk.

CREAM OF CORN SOUP

½ c. stewed or canned corn	1 tsp. flour
1 c. milk	1 tbsp. butter

Make a white sauce of the milk, butter, and flour. Less flour is needed for thickening, because the corn will help thicken the soup.

CORRECT METHOD OF HOLDING THE SPOON WHEN EATING SOUP

Heat the corn and press through the vegetable-ricer. Add corn to the white sauce. Re-heat. If desired, a spoonful of whipped cream may be placed in each soup-plate and the soup poured over it.

TO SERVE WITH SOUPS

Soup-sticks. Butter slices of bread. Cut into strips. Brown them slowly in the oven.

Croûtons. Cut buttered slices of bread into cubes. Brown in oven.

Wafers. Heat salted wafers in oven until crisp.

Parsley. Chopped parsley is sometimes sprinkled over the top of cream soups as a garnish.

Celery. Crisp celery is always good to serve with soups.

If possible, bring from home other recipes for cream soups.

REVIEW QUESTIONS

1. What are the foods usually served for luncheon or supper? Should all of these be served in the same meal?
2. What are "left-overs"? How may they be used?
3. How should "left-overs" be cared for?
4. Why do some persons object to "left-overs"?
5. How may the housekeeper reduce the amount of money spent for food?
6. Name some foods that are "out of season" at the present time. Why are they expensive?
7. State ways in which food is wasted in cooking.
8. When should soda be added to tomato soup? Why?
9. Are cream soups of much food value? Why?
10. Name some foods that should not be served when cream soups are used in the meal plan. Explain.
11. Make several supper or luncheon plans.

MEAT SUBSTITUTES

Such foods as cheese, milk, poultry, nuts, dried peas, beans, lentils, cowpeas, and soy beans are sometimes used in the diet in the place of meat, and are commonly called meat substitutes.

In the United States, people eat more meat per person than in any other country, and more than is necessary. This is because the flavor of meat is very much liked, because meat is easily cooked, and because it is popularly believed to be necessary for the best muscular work. It has been found, however, that meat may be replaced, for a part of the time at least, by other foods that contain a large amount of protein, without injury to the body and without loss in muscular strength. If meat is high in price it is well to remember this fact when planning meals.

Cheese is a product made from milk. When divided into its parts by the chemist, cheese is found to contain about one third water, one third fat, and one third protein. Cheese is usually divided into two classes:

(1) hard cheese, such as American Cheddar cheese, Edam, and Roquefort,and (2) soft cheese, such as Neufchâtel, Camembert, and cottage cheese.

The cheese most commonly found in the market is American Cheddar cheese, sometimes called "American cheese" or "New York cream cheese." The States making the most cheese are New York and Wisconsin. Much of our cheese comes from foreign countries, as, for example, Edam cheese from Holland, and Neufchâtel from France.

Cottage cheese is often made at home when there is an extra supply of milk; or skim milk may be used.

American cheese is usually purchased by the pound. A large family may find, however, that purchasing a whole cheese is a better plan, as the cost will be less. Cheese that is to be kept for several days after it has been cut should be placed on a plate and left uncovered in a dry clean place, or it may be covered with a cloth.

Some persons consider cheese hard to digest, and this may be so when it is eaten too hurriedly, or eaten after a meal at which enough food has already been eaten. When ground or grated cheese is combined with other foods, it is well digested by most persons.

LABORATORY EXERCISES

CHEESE

If there are several kinds of cheese sold in the local market it would be interesting to have a sample of each type in the laboratory for examination. Observe the texture and flavor. What is the price of each kind?

CHEESE SOUFFLÉ

½ c. No. 4 White Sauce	3 eggs
¼ c. grated cheese	Few grains cayenne

Add the cheese and cayenne to the hot white sauce. Beat the yolks of the eggs until they are thick and lemon colored; pour slowly over these the white sauce. Mix carefully. Let stand until cool. Beat the whites of the eggs very stiff. When white-sauce mixture is cool, fold in the stiffly beaten egg-whites. Turn into a buttered baking-dish, set the dish in a pan of warm water and bake in a moderate oven (350°–400° F.) until firm. Serve at once. The baking-dish may be placed in a holder made for the purpose, or it may be wrapped with a napkin before being placed on the table.

CHEESE STRATA

In the bottom of a buttered baking-dish place thin slices of bread, over this pour hot No. 3 White Sauce, on this a layer of grated cheese, then layers of bread, of white sauce, and more cheese, until the dish is filled. Cover the top with buttered bread crumbs. Bake in a slow oven (250°–350° F.) about thirty minutes. Serve in baking-dish.

WELSH RABBIT

¼ lb. grated cheese	1 egg
¼ c. cream or milk	2 tsp. butter
½ tsp. mustard	Few grains cayenne
½ tsp. salt	Toast

Place the cheese, mixed with the cream or milk, in top part of double-boiler and heat until the cheese is melted. Then add the beaten egg, to which the mustard, salt, and cayenne have been added; then add the butter. Cook until it thickens, stirring constantly. Pour over toast. Welsh rabbit is often made in the chafing-dish.

BREAD CRUMBS

All crusts and pieces of bread should be saved for bread crumbs. Dry them in a slow oven. Put through a food-grinder, or crush by placing on a bread-board and using a rolling-pin. Store the crumbs in open jars, never in tightly closed containers. If the crumbs are to be kept for several

weeks or months, a cloth should be tied over the top of the container.

Buttered bread crumbs, to be used on the top of escalloped dishes, are prepared as follows:

1 c. bread crumbs 2 tbsp. butter
Salt and pepper, if desired

Melt the butter in a frying-pan. Add the crumbs with which the seasonings have been mixed. Stir until the butter is thoroughly mixed with the crumbs.

Other cheese dishes may be made if desired.

The class may be divided into groups and each group make one recipe, the others copying the recipe. When family-size recipes are used, perhaps some of the products may be sold, either to individuals or in the lunchroom, if there is one.

REVIEW QUESTIONS

1. Name the meat substitutes.
2. Why are they called meat substitutes?
3. From what is cheese made?
4. What does the chemist find that cheese contains?
5. Into what two classes is cheese divided?
6. Name some examples of each class.
7. Which is the most commonly used cheese?
8. How is cottage cheese made?
9. Find out, if you can, how American Cheddar cheese is made.
10. How is cheese kept in the grocery?
11. What is the price per pound of American Cheddar cheese?
12. How should cheese be kept in the home?
13. Make a luncheon or supper plan in which each of the cheese dishes made in the laboratory might be served.

MEAT SUBSTITUTES (*Continued*)

NUTS

Nuts in general contain a large amount of fat and protein and may sometimes be substituted for meat in the diet. They may be used in their natural

form, or they may be ground and combined with other foods.

Peanuts are often used for making "peanut butter", which is a very valuable food.

English walnuts, almonds, and peanuts are the varieties of nuts most used. These are cultivated nuts, grown in the Southern States and California. Black walnuts, hazel nuts, hickory nuts, pecans, and chestnuts grow wild in some parts of the United States.

Nuts should not be eaten at the end of a meal when one has already taken the food needed. Nuts may be hard to digest when they are not chewed thoroughly.

DRIED LEGUMES

Peas, beans, lentils, soy beans, and cowpeas belong to the class of vegetable foods called legumes. They contain a large amount of protein, fat, carbohydrate, and mineral matter.

Dried beans, peas, and lentils are foods used especially in winter. When serving them it is not necessary to use meat at the same meal. Cowpeas and soy beans, while not so common, are used in the same way as beans, peas, and lentils.

Legumes may be baked, boiled, or combined in some way with other foods. Dried legumes require long periods for cooking. A fireless cooker is very useful when cooking legumes, or the pressure-cooker can be used and the time required much shortened.

Dried legumes must be thoroughly cooked to make them good for food, since the cellulose in them is tough. They are often soaked in water for several hours before cooking.

Dried legumes are usually purchased by the pound. Buying in quantity makes the cost less.

LABORATORY EXERCISES

DRIED LEGUMES

Examine samples of beans, dried peas, split peas, lentils, soy beans, and cowpeas. Compare the price by the pound. Which of these may be purchased at groceries in the neighborhood? Try the seed-store for cowpeas and soy beans.

BAKED BEANS

1 qt. white beans
1 tsp. soda
¼ lb. salt pork
1 small onion, if desired
1 tsp. mustard
½ c. molasses
Salt, if needed
Cayenne, if desired

Pick over, wash, and soak beans in cold water overnight. Pour off any water remaining. Put in kettle, cover with water, add soda and boil gently until the beans are slightly softened. This boiling is sometimes called "parboiling." Drain again. Put the beans into the bean-pot. Cut the pork into slices, but do not remove from the rind; press down into the beans with rind up. Place sliced onion on top. Mix the molasses, mustard, salt, and cayenne with one pint of boiling water and pour over beans. If liquid does not show on the surface, add more boiling water. Cover pot. Bake in slow oven six to eight hours. Uncover during the last hour, so that the beans will brown on top. A fireless cooker or oven may be used for baking beans.

A Bean Pot
Used for baking beans

NUT AND CHEESE LOAF

1 c. cottage cheese
1 c. nut meats
1 c. bread crumbs
Juice of ½ lemon
¼ tsp. pepper and 1 tsp. salt
2 tbsp. chopped onion
1 tbsp. fat
¼ c. water or meat stock

Grind the nuts; mix the cheese, nuts, salt, pepper, crumbs, and lemon juice. Cook the onion with the fat and water, or with the meat stock, until it is tender; add to other ingredients. Mix thoroughly. Pour into greased baking-dish. Bake about twenty minutes. Serve with tomato sauce.

TOMATO SAUCE

1 c. tomato-juice
2 tbsp. flour
1 tbsp. fat
1 slice onion
Salt and pepper

Boil the onion in the tomato-juice for three minutes. Remove the onion. Continue as for any white sauce.

PEA SANDWICHES

¼ c. pea pulp
1 tbsp. chopped nuts
1 tbsp. grated cheese
Lemon juice

Press canned peas through the vegetable-ricer. Measure the pulp, add the cheese, chopped nuts, and enough lemon juice to make the right consistency for sandwich filling. Spread between thin slices of bread.

Plan a meal in which such sandwiches would be suitable to serve.

REVIEW QUESTIONS

1. What foodstuffs are found in large amounts in nuts?
2. Which are the nuts commonly used in this locality?
3. What is the price per pound of peanuts? English walnuts?
4. Is it more expensive to buy them shelled?
5. How many pounds of peanuts in the shell does it take to make one pound of shelled nuts?

FOOD GRINDER

USED FOR GRINDING MEAT, CHEESE, VEGETABLES, NUTS, BREAD, AND OTHER FOODS

6. How is peanut butter made?
7. What are the commonly used dried legumes?
8. What foodstuffs do they contain?
9. Why are they called meat substitutes?
10. Why are dried legumes soaked in water?
11. How should dried legumes be cooked?

SALADS

Salads may be made from vegetables, fruits, or meats; or they may be a combination of vegetables and fruits, or of meats and vegetables to which has been added some kind of dressing and perhaps small amounts of other materials to give flavor.

Salad dressings are of three types: mayonnaise, French, and cooked dressing, and each type may be varied, making many kinds.

Lettuce is used in the making of many salads, often only as a "garnish" to make a dish more attractive. Either "head lettuce" or "leaf lettuce" may be used for this purpose. "Head lettuce" makes the most attractive garnish, because the leaves can be arranged cup shape, to hold the salad. Leaf lettuce for a garnish is more attractive when shredded. The leaf should be rolled, then cut in thin strips with scissors kept for the purpose.

Lettuce is usually sold by the pound; head lettuce is more expensive than leaf lettuce. When the lettuce comes from the store or from the garden, it should be washed, placed in a damp cloth bag, and laid in a cool place, preferably in a refrigerator. When lettuce is kept in the refrigerator for several hours, it becomes crisp.

When used for a salad lettuce should always be clean, crisp, and cold. Celery tops, endive, nasturtium leaves, water cress, and other garnishes are sometimes used for salad. Head lettuce may be cut into slices an inch thick, across the head, laid on a salad plate, and served

with a salad dressing, when it is known as "head-lettuce salad."

Lettuce is valuable as a food because of its mineral matter and vitamins, and should be served often. Many families now use it at all seasons of the year, even every day.

Salad oil is one of the materials used in some dressings. Salad oil may be made from olives, when it is called olive oil; or it may be made from corn or cottonseed, when it is usually sold by a trade name. When buying salad oil one should examine the label on the can or bottle, to see whether the oil is made from olives or other material, since oil made from corn or cottonseed should not be sold at so high a price as olive oil.

Eggs often form a part of the salad dressing and, when they are combined with the oil and used on the salad, add to its value as a food. Whipped cream also adds to the food value of a salad.

When meat salads are served for luncheon or supper, no other meat dish is needed. Vegetable salads, when made of the legumes, can be used as a meat substitute. Fruit salads can be substituted for dessert in many meals.

Besides being used as a part of a meal, salads are often served with sandwiches as "refreshments."

An attractive salad should have the following qualities: freshness, crispness, and coolness; it should have an appetizing flavor, and should combine well with the other food served in the meal.

LABORATORY EXERCISES

SALADS, SALAD DRESSINGS

Use a corn oil, a cottonseed oil, and olive oil in making the following dressings. The class may be divided into groups for the work. Compare the price of the three kinds of oil. Compare the taste of the dressings.

Lettuce should be washed, dried on a cloth, and be thoroughly crisp before it is used with salads.

FRENCH DRESSING

1 tbsp. sugar	¼ tsp. paprika
2 tbsp. vinegar	⅛ tsp. salt
4 tbsp. oil	⅛ tsp. white pepper

1 tsp. scraped onion, or onion juice

To the dry ingredients add the onion and the vinegar; stir thoroughly, add the oil, beat until of a thick creamy

"Candle Salad"

Made with a slice of pineapple, banana, a red cherry, and some strips of pimiento, all placed on shredded lettuce. The French dressing is in the bottle which is used for serving such dressing at the table. Shake the bottle before pouring out the dressing

consistency. French dressing may be made in quantity and kept for several days in a cold place. Beat thoroughly every time it is used.

MAYONNAISE DRESSING

1 egg-yolk	½ tsp. sugar
¼ tsp. salt	½ tsp. mustard
⅛ tsp. paprika	½ c. oil

1½ tbsp. vinegar or lemon juice

The oil should be cold. Beat the egg-yolk with the Dover egg-beater until it is thick and lemon-colored; add dry ingredients. When the mixture is well blended, add a little of the oil; beat, add more oil; beat again. When the mixture is thick, add a little of the lemon juice or vinegar; beat. Then add more oil and vinegar or lemon juice, beating constantly. Sometimes, in making this dressing, the mixture separates or curdles and does not become thick. When this happens, beat another egg-yolk until it is thick, and add the salad dressing slowly to the egg, beating constantly. Keep in a cold place.

COOKED DRESSING

1 egg
¼ c. vinegar
½ c. milk
¼ tsp. mustard
½ tsp. salt
1 tbsp. sugar
1½ tbsp. flour
1 tbsp. butter
Paprika if desired

Make a white sauce from the flour, butter, and milk; add the seasonings. Beat the egg until it is thick and lemon-colored. Gradually pour white sauce into the beaten egg, stirring well. Place in double-boiler and cook five to ten minutes. Add the vinegar slowly. If there are lumps, strain through a wire sieve. Cool.

If the dressing is thicker than desired, it may be thinned with a little cream or milk when it is to be used. For some salads, whipped cream may be added to the dressing.

THOUSAND ISLANDS DRESSING

1 c. mayonnaise
¼ tsp. paprika
1 tbsp. chopped pimientos
1 tbsp. chopped green pepper
1 hard-cooked egg
1 tbsp. catsup
½ c. chili sauce

When ready to serve, the chopped ingredients may be added to the mayonnaise. Serve over head lettuce.

SALMON SALAD

½ c. salmon
1 small chopped sweet pickle
1 tbsp. chopped celery or shredded cabbage
Mayonnaise dressing

Drain oil from salmon, remove all pieces of bone and skin. Add the celery or cabbage and the pickle. Mix carefully with a fork. Add dressing. Place on a bed of shredded lettuce. Garnish with hard-cooked egg if desired.

BANANA SALAD

Peel and scrape a banana. Slice lengthwise and once crosswise. Arrange on lettuce. Use cooked dressing to which whipped cream has been added. Chopped nuts may be sprinkled over the top.

VEGETABLE SALADS

Cooked and fresh vegetables make good salads with the addition of French or cooked dressing. The following combinations are suggested:

Diced carrots, peas, and chopped peanuts.

Green beans, chopped onion, and parsley.

Potato, cucumber, and green pepper.

Lima beans, carrots, and peas.

Tomato; stuffed with cabbage, celery, or cucumber.

Have students bring other tested salad recipes to class. Classify them into the following groups: (1) those suitable to serve as main luncheon or supper dish; (2) those suitable to serve with heavy dinners; (3) those suitable for picnics.

Make several luncheon or supper menus in which a salad is the main dish.

REVIEW QUESTIONS

1. Name the types of salad dressings.
2. What kinds of oils may be used in making dressings?
3. Which is most expensive?
4. What is the use of a "garnish"? What are some materials used for garnishing?
5. When should meat salads be served? Prepare a plan for a luncheon or supper in which it is proper to serve salmon salad.
6. What kind of vegetable salad can be substituted for meat in the meal? Why? Prepare a plan for a meal in which "Lima bean, carrot, and pea" salad is suitable.
7. Plan a luncheon or supper in which a fruit salad is suitable.
8. What are the characteristics of a good salad?

9. What may be served with salads?
10. Bring to class a good recipe for cheese crackers and one for cheese straws.
11. How should wafers be crisped when served with salads?
12. What is "head lettuce"? "Leaf lettuce"? What is the price of lettuce?

LABORATORY EXERCISES

SERVE A LUNCHEON OR SUPPER

Suggested Menu: Cream of Corn Soup
Cabbage Salad
Bread and Butter
Baked Apple with Cream

Make other menus for supper or luncheon.

Serve one of these meals at home and report on the work, stating time required and methods used in doing the work.

DRIED FRUITS

Drying is one way of preserving fruits. Many housekeepers on farms dry apples and other fruits at home, but a very much larger amount is dried by commercial firms. Many thousands of tons of peaches, apricots, prunes, and raisins are dried in California every year and shipped to all parts of the United States and to many other countries. Some of our dried fruits, such as dates, figs, and raisins, come from foreign countries.

Prunes are a kind of plum that have been dried. Raisins are dried grapes. Dates are the fruit of the date palm. Figs come from the fig tree.

Apricots, peaches, and prunes are usually purchased by the pound, and when packed in bulk should be carefully washed before using. They are often packed several pounds in a box, and if the whole box is purchased are cheaper in price.

Raisins, figs, and dates of the best grade are sold in

carefully wrapped packages. They can also be purchased by the pound. "Seeded" raisins are sold by the box, but it is well to look them over carefully to remove any seeds that may have been left.

Dried fruits, before cooking, should be washed carefully and then soaked in cold water overnight. The soaking shortens the time required for cooking and develops the flavor. They should be cooked in the water in which they have been soaked. A fireless cooker is useful in cooking dried fruits because they require long cooking.

Dried fruits are used in the same ways as canned fruits. When such dried fruits as apricots, peaches, and prunes are well cooked they make a good dessert for luncheon or supper and may occasionally be used as the fruit dish for breakfast. Prunes and figs have laxative properties and are especially good for anyone troubled with constipation. Dates, raisins, and prunes are good for children. Dates and raisins are very good cooked with cereals; they sweeten the cereal so that less sugar, or no sugar, need be used when eating the cereal. Prune juice is sometimes given to infants and children to help regulate the bowel movement.

LABORATORY EXERCISES

DRIED FRUITS

Experiments: 1. Wash one half pound each of dried peaches, prunes, and apricots; to each add one pint of water. Soak over night. Drain off and save any remaining water, How much does each fruit weigh? Explain what has happened.

2. Place the prunes in a closely covered kettle, add liquid in which they were soaked. Set kettle inside of large kettle of fireless cooker, fill cooker kettle half full of hot water. Cover cooker kettle. Place on hot radiator in

cooker. Cook about three hours. Do not open the cooker during this period. Remove prunes from cooker, add one half cup of sugar and boil for ten minutes over direct heat. Serve cold.

3. Place apricots in a saucepan, add liquid in which they were soaked, cover saucepan. Place over fire and simmer gently until fruit is tender. Hot water may be added if necessary. Add one half cup sugar, and heat until sugar is melted. Serve cold.

4. If there is a steam cooker in the laboratory, cook the peaches in this. Follow the same directions as for Experiment 2, except that the small kettle can be set directly on the shelf of the steam cooker.

5. Compare the fruit cooked in the different ways, as to appearance. Which is the most economical way of cooking?

PRUNE WHIP

1 egg-white 1 c. prune pulp
1 tbsp. lemon juice

Remove the seeds from the cooked prunes, rub prunes through a wire sieve, add lemon juice. Heat pulp. Beat egg-white very stiff. Add prune pulp gradually, folding it into the egg-white. Pile on serving-dish. Chill and serve as dessert.

DATE PUDDING

¾ c. sugar
2 eggs
¼ c. flour
1 c. chopped English walnut meats
1 tsp. baking powder
1 c. dates, seeded and chopped into small pieces
⅛ tsp. salt

Beat the eggs slightly, add the sugar, beat until creamy. Mix dates, nuts, baking powder, flour, and salt, and add to first mixture. Mix and turn into a greased baking-dish. Bake in moderate oven (350°–400° F.) twenty to thirty minutes, or until the pudding just becomes firm. Serve hot or cold with whipped cream.

REVIEW QUESTIONS

1. Name the dried fruits you have seen.
2. What fruits are often dried at home?
3. What methods are used in drying fruits at home? Farmers' Bulletin No. 984, "Drying Fruits and Vegetables in the Home", from Division of Publications, U. S. Department of Agriculture, Washington, D. C., will tell you how fruits are dried.
4. What fruit are prunes? Raisins?
5. From which countries do we obtain dates, figs, and raisins?
6. What is the price per pound of apricots, prunes, and dried peaches?
7. In what kinds of packages may dates, figs, and raisins be purchased?
8. What is the price of the ordinary package of dates? Of figs? Read the label on the package to find weight of contents.
9. Give general directions for cooking dried fruits.
10. Plan a luncheon or supper in which date pudding might be used correctly as the dessert.

QUICK BREADS

All breads are divided into two classes, (1) quick breads and (2) yeast breads. Quick breads are made in a shorter time than is required for making yeast breads, and are generally served hot.

A quick bread requires the following ingredients: flour, a liquid, salt, and a leavening agent. To these may be added some other ingredients, not necessary but often desired, such as shortening, sweetening, flavoring, and eggs.

White, whole wheat, and Graham flours, and corn meal, are generally used in the making of quick breads. Other flours that can be used are corn, rice, rye, buckwheat, barley, and potato flours. Corn meal is used more extensively in the South than elsewhere in the United States. Since corn is a cereal it is a very valuable food; therefore corn meal and other corn products should be used in greater quantities than they are

in most families. There are two kinds of corn meal, (1) yellow, made from yellow corn, and (2) white, made from white corn. The flavor differs slightly.

The material added to any bread to make it "light" is called a leavening agent. The leavening agents commonly used are air, steam, baking powder, soda, and yeast; all except the last are the ones used in quick breads.

Air is added by beating eggs very light and folding them into the flour mixture, or by rapidly beating the flour mixture itself. The air expands when heated, causing the mixture to rise.

Steamed Brown Bread

When the heat in the oven turns the water which is in the flour mixture into steam, further heat causes the steam to expand, and this causes the flour mixture to stretch, thus making it "rise." Pop-overs are a kind of quick bread made to rise with air and steam.

Baking powder is a compound made of baking soda, an acid substance, and a starchy material. The acid substance used varies with different baking powders. Some of the good baking powders are made by combining cream of tartar (the acid substance), baking soda, and starch. Whenever baking soda is put with an acid and moisture is added, carbon dioxide gas is formed. This is what happens when baking powder is put in a flour mixture, — the baking powder supplying the acid

and soda, while the moisture is supplied by the flour mixture. When heat is applied, this gas expands the flour mixture and causes it to rise.

Baking powder is used when sweet milk or water is the liquid used in the flour mixture.

It is never wise to buy cheap baking powder, for it is often poorly made and does not produce good results.

Baking soda is used with sour milk or buttermilk. The sour milk and buttermilk contain the acid needed to combine with the soda to form the carbon dioxide gas. Soda is often used when molasses is needed in the recipe, because some kinds of molasses contain a good deal of acid; but much molasses that is now sold is not very acid, and soda must be used with it carefully. Baking soda is difficult to use correctly with milk in cookery because the amount of acid present in the milk varies.

HOME PROBLEMS AND QUESTIONS

Make a list of the brands of baking powder that you have seen advertised or used. In what kind of container is baking powder sold? Why?

Well Shaped Muffins

What is the difference in price per pound when baking powder is bought in a one-pound container, one-half pound, and one-fourth pound?

Is corn meal sold by the pound or in the package?

Which is the more commonly used in this locality, white or yellow corn meal? Why?

Make a list of firms making flour which you have seen advertised. Is there a flour mill in the neighborhood? If so, perhaps the teacher can arrange to go through the flour mill with the girls. In that case, write down all the processes through which the wheat goes in becoming flour.

LABORATORY EXERCISES

QUICK BREADS

In all recipes sift the flour before measuring.

BAKING-POWDER BISCUITS

- ⅔ c. milk, or less
- 2 c. flour
- 4 tsp. baking powder
- 2 tbsp. fat
- ½ tsp. salt

Add the salt and baking powder to the flour; sift again. Cut the fat into the flour, using two knives. Add enough liquid to make a soft dough, mixing quickly. Place on floured board, roll one half to three fourths inch in thickness, cut with biscuit-cutter, place on baking-sheet. Have oven hot when biscuits are put in (400°–450° F.). Bake fifteen minutes.

MUFFINS

- 2 c. flour
- 4 tsp. baking powder
- ¼ tsp. salt
- 2 tbsp. sugar
- 1 c. milk
- 2 tbsp. melted butter
- 1 egg

Sift flour, baking powder, salt, and sugar together. Beat egg slightly, add milk. Stir the flour mixture into the liquid, add the melted butter. Place in greased muffin tins. Have oven moderately warm (350°–400° F.) when muffins are put in. Bake about twenty minutes.

SOUTHERN SPOON CORN BREAD

- 2 c. white corn meal
- 2½ c. boiling water
- 1½ tbsp. melted fat
- 2 eggs
- 1½ c. buttermilk
- 1 tsp. soda
- 1½ tsp. salt

Add corn meal gradually to boiling water and let stand until cool. Beat egg yolks slightly; add salt, buttermilk, and soda; mix immediately with corn meal. Beat two minutes, add the stiffly beaten egg-whites. Put in buttered baking-dish. Bake in a moderate oven (350°–400° F.) forty-five minutes.

STEAMED BROWN BREAD

1 c. milk
$\frac{1}{4}$ c. sorghum molasses
$\frac{2}{3}$ c. Graham flour
1 c. corn meal
1 tsp. baking powder
$\frac{1}{3}$ c. raisins and currants mixed
$\frac{2}{3}$ tsp. salt

Put together in the order given. Grease the insides of empty baking-powder cans and put in the mixture, filling the cans two thirds full. Cover the cans either with the can lid or by tying oil paper over the top. Steam one hour. Either a steamer or a kettle containing boiling water with a rack in the bottom may be used.

CAKE

Cake, well made and well baked, is not harmful if eaten slowly and not in too great quantity.

Children should not be allowed to eat large amounts of cake because it contains a good deal of sugar, and although sugar is a good food, yet when too much is eaten it may irritate the stomach and cause trouble in digestion. Then too, cake, like "new" bread, is so soft and tender that it is a temptation to swallow it without proper chewing. When too much cake is eaten it spoils the appetite for other more useful foods, such as milk and vegetables.

Cookies are best for little children because they are drier and require more chewing. Cake should be eaten at mealtime and not between meals.

All cakes may be placed in two classes: (1) those made without fat, such as sponge cake, and (2) those

made with fat, such as plain butter cakes. A plain cake recipe may be varied in a great many ways, thereby affording different kinds of cake. Some of the materials that may be added to change the taste and appearance are spices, flavoring extracts, fruits, nuts, and chocolate. Butter has been considered the only fat suitable to use in making cake, but with butter high in price, many have used other fats and found them very good. Some of these are oleomargarine, corn oil, cottonseed oil, and other vegetable fats.

BABY'S FIRST BIRTHDAY

SHE HAS A BIRTHDAY CAKE TO LOOK AT, BUT NOT TO EAT, WHILE SHE LOVES HER NEW DOLL

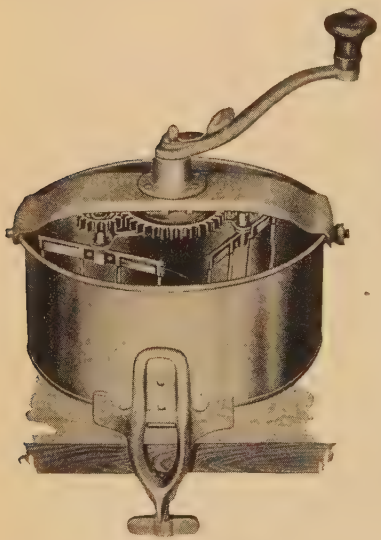
Pastry flour is often used in cake-making and makes a tenderer cake than many bread flours. A bread flour made from soft wheat is better for use in cake than one made from hard wheat. If bread flour is to be used in making cakes, it may be made more like a pastry flour by adding cornstarch, in the proportion of 1 to 2 tablespoons of cornstarch to a cup of flour.

When too much sugar is used, it makes the cake more crumbly and the crust sticky and tough. Honey or syrup sometimes may be used in a cake in place of sugar.

Baking powder, soda, eggs, and air are the leavening agents used in cakes.

Loaf and layer cakes are flour mixtures called thick batters, while cookies are called stiff doughs. A batter is a flour mixture that is stirred with a spoon. A dough is a mixture stiff enough to be kneaded and rolled.

Cakes and cookies should be kept in tight metal containers so that they will not dry out, and so that they will not absorb moisture.



A Cake-mixer

A labor-saving device when much cake is made

HOME PROBLEMS AND QUESTIONS

The following proportions are those generally used for flour mixtures. The amount of flour cannot be stated accurately because different brands of flour will absorb different amounts of liquid.

To make a pour batter, use as much liquid as flour.

To make a drop batter, use two cups of flour to one cup of liquid.

To make a soft dough, use three cups of flour to one cup of liquid.

To make a stiff dough, use four cups of flour to one cup of liquid.

Study the flour mixtures you have made and decide to which class each belongs. When would this information about flour mixtures be of value to you?

What brands of pastry flour are sold in the local stores? Is the pastry flour sold by the pound or in packages? Compare the price of bread flour and pastry flour.

What brands of bread flour are made by the Northwestern flour mills? Are any bread flours made by the mills in your locality? Is it a wise plan to use these local flours? Why?

Have each student bring to class one cake recipe which is known to be accurate. To which class of cakes does each belong? These recipes may be copied on cards by each member of the class to put into her card-file cook book.

LABORATORY EXERCISES

CAKE-MAKING

Cakes made with fat: The following method is generally used in making cakes with fat:

1. Measure all ingredients.
2. Grease the cake-pans.
3. Cream the fat by rubbing and beating with a wooden spoon.
4. Add sugar gradually, beating the mixture until it is of a creamy consistency.
5. Beat yolk of eggs until it is thick and lemon-colored. Add to butter and sugar.
6. Add the baking powder to part of the flour.
7. Add the rest of the flour and milk alternately to the egg and sugar mixture.
8. Add vanilla and baking powder.
9. Beat egg-whites very stiff and fold into mixture.
10. Half fill greased pans. Bake (350°–400° F. for layer cake, 300°–350° F. for loaf cake).
11. Fruit or nuts should be mixed with a little of the flour and added just before the egg-whites.

STANDARD CAKE

¼ c. butter	½ c. milk
1 c. sugar	1½ c. flour
2 eggs	2½ tsp. baking powder
	½ tsp. vanilla

This cake recipe may be varied by adding to it one cup of chopped nuts; or one tablespoon of spice; or two ounces of melted chocolate; or one-half cup of currants.

Cakes made without fat. The following is the method used in making cakes without fat:

1. Sift flour and sugar several times before measuring.
2. Beat yolks of eggs until the mass is thick and lemon-colored.
3. Add sugar gradually, beating with Dover egg-beater.
4. Add lemon juice or other flavoring.
5. Beat egg-whites until very stiff.
6. Partially fold egg-white into sugar and egg mixture.
7. Remove egg-beater; use spatula, and fold in flour and salt very carefully.
8. Bake in a tube cake-pan, unbuttered.
9. Bake forty to sixty minutes at 300°–400° F.
10. Do not open oven door for first twenty minutes.
11. After removing cake from oven, invert pan on cake-rack, but do not remove cake until cold.

SPONGE CAKE

6 eggs	Grated rind of ½ lemon
1 c. sugar	1 c. flour
1 tbsp. lemon juice	¼ tsp. salt

BOILED FROSTING

1 c. sugar	½ c. water
1 tsp. flavoring	1 egg-white

Mix sugar with water and boil until it "spins a thread" (232° F. on the thermometer). Beat egg-white stiff; over this pour the syrup slowly, beating all the time until it first begins to stiffen. Add flavoring and spread over cooled cake.

REVIEW QUESTIONS

1. What is a "leavening agent"?
2. Name the leavening agents used in quick breads. In cakes; in yeast bread.
3. What leavening agent is used with sweet milk? With sour milk? With molasses?
4. Explain the action of baking powder in a flour mixture.
5. Explain the action of soda in a flour mixture.
6. What is the leavening agent used in sponge cake? Explain the action.
7. Into what two classes may cakes be divided? Give examples under each class.
8. Give the proportions of ingredients used in a standard cake.
9. How may this be varied?
10. Give the general rules for making a cake with butter; without butter.
11. Give directions and proportions for baking-powder biscuits.
12. What kind of flour may be used in cakes?
13. Define the terms "dough" and "batter."
14. When and how should cake be eaten?
15. Why are cookies best for little children?

THE SCHOOL LUNCH

Many children must eat their lunch at school, and it is very important that they shall eat the right foods — foods which are easily digested, which are clean, and which furnish the foodstuffs needed. The lunches eaten by school children (1) may be purchased in the school lunchroom, (2) may be brought in part from home, perhaps helped out by a hot dish provided at school, (3) may be brought entirely from home, (4) may be bought in cafeterias or lunchrooms not managed by the school, or (5) may be purchased at a grocery or other food store, and eaten from paper bags or boxes.

Lunchrooms are usually found in the larger schools or high schools, and the child who attends such a school can have hot food each day for lunch. Many times the

lunch chosen is not properly selected and does not furnish the food value needed. In selecting a lunch, choose one main dish, such as a cream soup, or a cheese dish, or eggs creamed on toast, baked, or in salad; or a salad, such as salmon or tuna-fish salad, potato, bean, or pea salad, or meat salad, or a meat stew. With this main dish, bread and butter or sandwiches or crackers and butter may be eaten. If a cream soup is not selected, milk should be included in the menu. Occasionally cocoa made with milk may be substituted for the milk. Something sweet is usually desirable to finish a lunch, such as custard or a simple pudding, dried or fresh fruits, plain cake or cookies, and occasionally a piece or two of candy. The following are suggested combinations to select for the school lunch. You can make other menus as good.

1. Cream of potato soup, fruit salad, nut-bread sandwiches, dates.
2. Creamed eggs on toast, apple sauce, cake, milk.
3. Meat stew, bread and butter, milk, orange.
4. Potato salad, minced-ham sandwich, milk, stewed apricots.
5. Salmon salad, rolls with butter, milk, caramel custard.

When part of the lunch is brought from home to be eaten with a hot dish provided at school, such foods as sandwiches, plain cake or cookies, fruits, custard, or simple puddings may be brought, since the school will probably provide hot cream soups, cocoa, or stews. Such luncheons are usually served in rural schools where there is no lunchroom. The hot dish is sometimes prepared by the girls in the Foods class, the class being divided into groups and a different group doing the work each day. The materials may be paid for out of school

funds and the hot dish furnished free to the children, or the children may pay for the food. In some schools the children bring from home the foods that are to be cooked, each child furnishing his share during the year. In other localities the mothers send from home a hot soup, cocoa, or stew in a fireless cooker. Every one

A Modern Cafeteria

likes something hot for lunch on a cold day, and the lunch with one hot dish is preferable to a cold lunch.

When all of the lunch must be brought from home, it must be planned carefully; the menu must be varied each day, the lunch must be packed correctly in the right kind of container, and the food must be eaten at school in an orderly manner.

The same rules for selecting the lunch in the school lunchroom should be followed in selecting one in a restaurant or cafeteria not operated by the school. In a cafeteria of this kind, one may have a greater variety

of foods from which to select, and it may be more difficult to choose the proper foods from such a variety. It is especially important that foods be kept in a sanitary manner in such a place, and that they be cooked well and served neatly.

Buying foods from stores and eating from paper bags or boxes is a poor plan for a school lunch, because it is not possible to get the best kinds of food for a lunch, nor is it always possible to get clean foods, and eating from a paper bag may make one careless about table manners.

QUANTITY COOKERY[1]

APPROXIMATE AMOUNT OF FOOD NEEDED TO SERVE FIFTY PEOPLE

Material	Amount
Beans for baking	3 quarts or 6 pounds
Beef, roast	20 pounds
Beef, round steak cut $\frac{3}{4}''$ thick for Swiss steak	20 pounds
Beef, ground for meat loaf	10 pounds
Biscuits, flour as a basis	3 quarts
Bread — 1 pound loaves	5
Butter	1 to $1\frac{1}{4}$ pounds
Cabbage, creamed with 3 qts. medium white sauce	10 pounds
Carrots, creamed with 3 qts. medium white sauce	12 pounds
Chicken, roast	25 pounds
Cocoa — $\frac{1}{2}$ gallon water 2 gallons milk	3 cups or $\frac{3}{4}$ pound
Coffee — $2\frac{1}{2}$ gallons water	5 cups ground coffee, usually 1 pound
Cream for coffee	1 quart
Cream to be whipped	$1\frac{1}{2}$ pints
Ice cream, bulk, large servings	2 gallons
Ice cream, brick	5 bricks to gallon. $1\frac{2}{3}$ gallons
Lettuce, head for garnish	2 to 4 pounds

[1] Compiled by Edith Gamble, Professor of Institution Management, Purdue University, LaFayette, Indiana.

Material	Amount
Lettuce, head for salad	7 pounds
Peas	2 No. 10 cans or 10 No. 2 cans
Punch — 1 quart lemon juice	1½ dozen small lemons
1 quart orange juice	1 dozen oranges, medium
2 quarts sugar	
2 gallons water	
Potatoes, mashed	1¼ pecks
Potatoes, creamed with 3½ to 4 quarts medium white sauce	¾ peck
Salad dressing, garnish	1 quart
Spinach	2 No. 10 cans or 10 No. 2 cans
Salad, fruit or vegetable	7 quarts
Sandwiches:	
Bread, 1 pound loaf	2
Cheese, cottage, as basis	4 pounds
Eggs, as basis	2 dozen
Fruit, dried, as basis	2 pounds
Ham, as basis	3 pounds
Soup	3 gallons
Veal or pork, creamed with 3 quarts medium thick white sauce	12 pounds, uncooked

Recipes for Fifty

The following recipes may be used in preparing the one hot dish at school. Each recipe will serve fifty.

COCOA

1½ c. cocoa	8 qts. milk
2 c. sugar or syrup	1 qt. boiling water
1 pt. water	

Mix cocoa with pint of cold water until smooth; add boiling water and boil twenty to thirty minutes, stirring occasionally. Add sugar to hot milk in double-boiler, and pour cocoa mixture into this. Beat with Dover egg-beater until froth forms on surface.

CREAM SOUP — POTATO

8 lbs. potatoes or	10 qts. scalded milk
24 medium size potatoes	2 c. fat
4 medium onions	1½ c. flour
2 qts. boiling water	6 tbsp. salt
Parsley	⅓ tsp. cayenne

Make a white sauce of scalded milk, fat, flour, and salt; add to this the cooked, diced, or mashed potatoes and onion. Season, serve hot.

BUSY COOKS IN A RURAL SCHOOL

PERHAPS THEY ARE PREPARING THE NOON LUNCH

CREAMED EGGS

3 doz. hard-cooked eggs	3 qts. white sauce

Slice eggs, place in warm dishes, and pour hot white sauce over them.

WHITE SAUCE (3 QUARTS)

⅔ c. fat	3 qts. whole milk
1 c. flour	1 tbsp. salt
	Pepper

Place fat in double-boiler; when melted, stir in flour, making a smooth paste. Add one quart of milk slowly, stirring constantly to make smooth. When the mixture

begins to thicken, add the rest of the milk. Add salt and pepper. Cook thirty minutes in double-boiler. This recipe may also be used for vegetables or meats.

VEGETABLE SOUP WITHOUT STOCK

1 qt. carrot
1 qt. turnip
1½ qts. celery
4½ qts. potato
6 onions
12 qts. water
3 c. butter
6 tbsp. finely chopped parsley
Salt and pepper

Wash and pare carrots and turnips; cut in strips one inch long and one-fourth inch wide, or put through meat-grinder. Wash, pare, and cut potatoes in small pieces. Cut onion in thin slices and celery in quarter-inch pieces. Measure vegetables after cutting; mix all except potatoes, and cook ten minutes in butter, stirring constantly. Turn into soup kettle, add potatoes and water; cook one hour. Season to taste with salt and pepper, add parsley, and serve at once, boiling hot.

SPANISH RICE

5 c. rice
1¼ lbs. salt pork
2 medium onions
Salt to taste
1 sweet red pepper
2 small green peppers
2 qts. strained tomato, or part stock

Wash rice in cold water until water is clear. Add rice slowly to ten quarts boiling water; parboil ten minutes; drain.

Chop salt pork, cook in oven in frying-pan until fat is fried out, but do not let it get brown. Add chopped onion and seeded and chopped peppers, and fry for a few minutes, or till slightly yellowed. Put all ingredients into double-boiler, add strained tomato, and cook thirty minutes, or until rice is soft, but not mushy.

MACARONI WITH CHEESE

2 qts. macaroni broken in pieces
1½ c. butter
1½ c. flour
4 tsp. salt
½ tsp. paprika
4 qts. milk
6 c. chopped cheese

Place macaroni in boiling salted water and cook until tender. Make a white sauce of the butter, flour, milk, and seasonings, following directions for white sauces. Dissolve chopped or grated cheese in sauce. Put macaroni in baking dishes, pour over the sauce, lifting macaroni with fork to distribute it evenly. Cover with thin layer of buttered crumbs, using three cups stale crumbs and one-half cup butter. Do not use dried crumbs. Bake until crumbs are brown.

BOSTON BAKED BEANS

3 qts. pea beans	¼ c. brown sugar
4 tbsp. salt	1 tbsp. mustard
1 c. molasses	1 tsp. pepper
¼ c. vinegar	2 lbs. fat salt pork

Pick over beans, cover with cold water, and soak overnight. Drain, cover with cold water, add one teaspoon soda, bring to boiling-point, and parboil fifteen minutes, or until skins burst when exposed to air; drain.

Scrape and scald pork rind, cut pork in two pieces, and cut through rind every half-inch to the depth of one inch.

Mix salt, sugar, mustard, and pepper, and dilute with molasses and vinegar. Put an equal quantity of beans and seasonings into each of two bean pots, bury pork in beans, fill pots with boiling water, cover, and cook slowly six or eight hours, or more, adding more water if needed.

LABORATORY EXERCISES

WHOLE WHEAT OR GRAHAM BREAD

Make like yeast bread (see Bread), except that one half or more of the white flour is replaced with Graham or whole-wheat flour; and, instead of using sugar, use twice as much molasses or brown sugar.

Variations in the bread may be made by adding 1½ cup of chopped walnuts or pecans, or by adding one cup of chopped, floured raisins. Why must the raisins be floured? Why is

it better to chop the nuts than to put them through the meat-grinder?

SUGAR COOKIES

¼ c. butter	1 egg
½ c. sugar	1 tsp. baking powder
2 tbsp. milk	1 c. flour

Cream together the butter and sugar; add the unbeaten egg and beat thoroughly. Add the milk and the flavoring.

Cookies are Good for the School Lunch

Add the flour a little at a time, beating and mixing thoroughly. Add the baking powder with the last part of the flour. Sprinkle a bread-board with a little flour; place dough on board and roll out to one-quarter inch in thickness; cut with the cookie cutter. Place on a baking-sheet and bake in a hot oven (350°–450° F.).

DATE CAKES

1 lb. dates	2½ c. rolled oats
1 c. brown sugar	2½ c. flour
1 c. water	1 c. granulated sugar
1 c. fat	¼ tsp. salt

Wash, seed, and chop dates; add brown sugar and one half the water; cook in double boiler until a paste is formed. Cream fat and granulated sugar together. Add the salt. Add remainder of water, flour, and rolled oats, alternately. Place a little of the mixture on the bread-board. Roll very thin. Over the top of half the dough spread some of the date paste; fold the other half of the dough over this; press together gently. Cut with sharp knife into rectangular pieces, any size desired. Place on baking-sheets and bake in a moderate oven (350°–400° F.) twenty to thirty minutes. Never try to roll more than a small portion of the dough at a time, because it is difficult to fold over a large amount.

BAKED CUSTARD

1 pt. milk	2 eggs
2 tbsp. sugar	½ tsp. vanilla
	⅛ tsp. salt

Scald the milk, sugar, and salt together. Beat the eggs slightly, pour the scalded milk over them gradually; add vanilla, stir well. Pour into cups or ramekins. Set in pan of warm water; bake in a slow oven (250°–350° F.) until a knife thrust through the middle of the custard will come out clean.

SANDWICHES

Breads good to use for sandwiches are white yeast bread, whole wheat bread, brown bread, nut bread, and raisin bread. The butter used should be creamed by stirring and beating with a spoon until it is creamy instead of solid. A spatula is best to use for spreading butter on the bread. The slices of bread coming together in the loaf should be put together in the sandwich so that they "fit."

Sandwiches for the lunch may be varied in three ways: (1) by using different kinds of bread; (2) by using different kinds of filling; (3) by cutting the bread into different shapes.

The following are some good sandwich fillings. Perhaps some of the members of the class can suggest others.

1. Date paste, made of chopped dates and a little water, cooked together until a paste is formed. Lemon juice and chopped nuts may be added.
2. Jelly, jam, or marmalade.
3. Cottage cheese with pimiento or nuts.
4. Lettuce with salad dressing.
5. Hard-cooked eggs, put through vegetable-ricer and seasoned. Minced ham or salad dressing may be added.

Raisin Bread

From which very good sandwiches can be made

6. "Left-over" meat, chopped and seasoned, or mixed with salad dressing.
7. Cooked dried beans, put through a colander and mixed with cream, or salad dressing and chopped pickle.
8. Pea pulp with grated cheese and nuts.

NUT BREAD

1 c. brown flour	½ c. chopped nut meats
1 c. white flour	2 tsp. baking powder
1 c. sweet milk	½ tsp. salt
½ c. sugar	½ egg

Mix a little of the flour with the nuts; mix a little with the baking powder. Beat the egg, add the sugar and salt. Add the sweet milk and flour alternately; then the nuts and baking powder. Pour into greased bread-pan. Let rise twenty minutes. Bake one hour in a moderate oven (300°–400° F.).

PACKING THE SCHOOL LUNCH

A school lunch may be planned correctly and the foods may be well cooked, but the lunch is not attractive unless it is well packed. Making the lunch attractive makes it pleasanter to eat. If children are not very hungry, they usually will not eat mussy foods, especially those that they do not like particularly well.

When possible, the daughter should help her mother in preparing her school lunch or the lunches for her brothers and sisters.

The receptacle in which the lunch is packed is very important if the lunch is to keep in good condition. Tin buckets or tin boxes are best. Lunch-boxes with a thermos bottle slipped in the top may be purchased, but they are expensive. Some tin lunch-boxes fold when empty.

Pasteboard boxes are not good because they cannot be thoroughly cleaned. Newspapers should not be used for wrapping lunches; if paper must be used, choose clean wrapping-paper.

Baskets may be used, because they are light to carry. Baskets must be washed and aired in the sun every few days to keep them in a sanitary condition.

Oiled or waxed paper should be used for separately wrapping sandwiches, cakes, and other foods to go in the lunch. This paper can be purchased at little cost and keeps the food in better condition. Covered glasses should be used for custards and similar foods.

Every child should have a drinking-cup and plate.

These may be of enamelware and often are decorated with pretty designs in color. Either paper napkins or napkins made of such materials as Japanese toweling or cotton crêpe may be used. There should always be one napkin to use as a cover for the desk and one for wiping the fingers. The silverware needed for eating the lunch should also be put in the lunch-box.

A Tin Lunch-box with a Thermos Bottle, Oil-paper, Paper Napkins, Drinking Cup and Covered Glass in Which to Carry Custard or Similar Foods

In packing the lunch, place the articles in the box in such a manner that they will jar as little as possible, with the heavier things at the bottom. The napkins should be on top of the lunch, so that the one to be used as a tablecloth can be placed before unpacking the lunch. A lunch-box should have a handle, so that it may be carried right side up when packed. In very cold weather the inside of the lunch-box may be lined with several thicknesses of wrapping-paper to protect the lunch from freezing.

When lunch time comes, the hands and face should be washed, each one using his or her own soap and towel. Paper towels and liquid soap may be provided in the rest-room.

The dishes should be removed from the lunch-box and placed in an orderly way on the napkin spread over the top of the desk or on the table provided for that purpose. Eat the lunch slowly, using good table manners. After finishing the lunch, pupils should put the room in good order.

LABORATORY EXERCISES

Obtain several good containers and other equipment necessary for packing lunches. Divide the class into groups, and have each group prepare foods suitable to use in the school lunch.

Pack the following lunches:

(1) Nut-bread-and-butter sandwich
Cream soup (in thermos bottle)
Lettuce sandwich
One orange
Date cookies (two)

(2) Milk
Egg sandwiches (two)
Jelly sandwich
Baked apple

(3) Bread and butter sandwiches (two), cut in triangular shape
Nut-bread and butter sandwich
Custard
Dates, raisins, or figs

Plan some lunches in which cocoa, or soup, or meat stew is served at school and the rest of the lunch is brought in the lunch-box.

REVIEW QUESTIONS

1. What kind of lunch-boxes should be used? Why?
2. Name the other equipment needed for packing a lunch well.

3. What is the price of oiled paper? Where can it be obtained in this locality?

4. How should the school lunch be served?

5. What rules should be followed when eating the lunch?

6. How should good sandwiches be made?

7. Should the daughter in the house help prepare the lunch for school?

8. What foods should be prepared in sufficient quantity for several lunches, to be used on different days?

9. Name five methods by which children obtain school lunches. Which methods are considered good? Which poor? Why?

10. What are the requirements for a good school lunch?

11. Make several menus for good school lunches: (*a*) selected from the school cafeteria counter; (*b*) brought from home; (*c*) with one hot dish served at school.

12. If your father works out-of-doors, and carries his lunch, make a menu suitable for him to eat on a winter day; a summer day. If he works in an office, should the lunch be of a different type? Why?

MEALS OUT-OF-DOORS

Most boys and girls like to go on picnics. A picnic lunch may consist entirely of cooked foods that are ready to serve, or part of the foods may be prepared at home and others cooked over a camp fire on the beach, in the woods, or wherever the picnic is to be held.

When all the foods are to be prepared at home, they must be carried in suitable containers, so that they will be in good condition when it is time to serve them. Thermos bottles or jugs may be used for carrying hot cocoa, milk, water, or any other cold or hot drink, and bottles having a large mouth may be used for hot or cold foods. One may use a picnic basket equipped with knives, forks, spoons, plates, cups, and containers for various types of food. In some of these baskets there are compartments for ice, so arranged that foods may be kept cold. These baskets are quite elaborate, ex-

pensive, and heavy to carry, and often thermos bottles or jugs can be used for foods which must be kept hot or cold, while other foods may be packed as you would pack a school lunch.

Tourists. Camping in the Mountains, Having a Meal Out-of-doors with Camping Equipment

When going on a tramp, if a lunch is needed, one cannot carry heavy containers filled with food. Often such a lunch will consist of sandwiches wrapped in waxed paper, and perhaps oranges or other juicy fruits when it is not practical to carry even a small thermos

bottle. When tramping or going on a picnic, one should be very careful about drinking water. Water from running streams, ponds, or lakes is not safe to drink without boiling; even water from some springs is not pure, and often water from a dug well is not safe for drinking. It is always safer to carry from home the water used for drinking purposes when this is possible, unless one knows that the water supply is pure. When this cannot be done, and one is not sure about the purity of the water, eating juicy fruits will usually quench the thirst, and eating them instead of drinking water is the safer plan.

Aluminum or enamelware plates and cups may be used for picnics. Paper plates and cups to be used for cold drinks may be burned or otherwise disposed of after the picnic lunch is eaten, thus making unnecessary the carrying home of dishes. "Luncheon sets" are sold in packages containing a paper tablecloth and napkins, paper plates, paper cups, and sometimes paper spoons and forks.

Such foods as meats for broiling, potatoes for baking, green corn for roasting, bread and marshmallows for toasting, or foods canned in tins, such as baked beans, for heating in the fire, may be included in a picnic menu. Camp fires may be made and the cooking done over them, or one may use a gasoline or alcohol stove designed for the purpose. A camp fire is preferable for a picnic, but on longer trips, when meals for several days must be prepared, it may be desirable to use a stove.

In cooking with a camp fire several methods may be used. A grill made of heavy wire may be placed over the fire, and the frying-pan, pot, or pail may be placed on this for heating. The best cooking can be done over hot coals. Perhaps you would rather broil your

meat by putting it on a long stick or wire and holding it over the coals, turning often until done. Marshmallows or bread may be toasted in the same way.

Cooking over a Camp Fire in Wisconsin

The coffee pot is on a hot stone heated by the fire at the side; the frying-pan is also resting on stones

Or you may heat stones by burying them in the hot coals, removing from the fire when hot, and broil steak, chops, or bacon and make toast on them. After heat-

ing the stones, wipe one side with paper and grease the stone with fat; then the surface will be ready to use for cooking. Potatoes may be wrapped in several thicknesses of wet paper, then buried in the hot ashes, over which hot coals are placed until the potatoes are done. In preparing green corn for roasting, pull back the husks at the end and remove the silk, dip the corn in water, replace the husk and tie into place, bury in hot ashes, cover with hot coals. Before placing a tin can of baked beans or other foods in the coals to heat, pierce a small hole in the top of the can, since the steam which will be formed in the can must have a way to escape or there will be an explosion. "Clam bakes" and "fish fries" are popular along the seacoast. Clams are baked by burying them in sand on top of which a fire is built. Fish may be covered with clay and placed in the coals to cook, or may be sautéed in a frying-pan over the fire.

In planning a picnic it is important:

1. To plan a menu which requires few dishes for serving, and which does not contain cooked foods that are spoiled with standing or jarring.
2. To make a list of all utensils and dishes and of the amounts and kinds of foods needed, so that none will be forgotten.
3. To pack these so that foods will not be crushed or exposed to dust or flies, so that dishes will be kept free from dust and flies, and so that thermos bottles or other glass or china containers will not be broken.
4. To pack the lunch in such containers as can be conveniently carried or placed in the available space in an automobile. It is better to pack the lunch in several light-weight baskets or boxes when it must be carried some distance by hand.

5. To take several tea towels, hand towels, and cloths to be used for emergencies, or when clearing up after the meal.

After the picnic lunch has been finished, all papers, paper plates, or paper cups should be burned or buried; tin cans should be buried or thrown where they will not be seen; and the fire must be put out with water or by covering with earth, sand, or clay. Forest fires are often started from camp fires that are left smouldering. Because so many people are careless about clearing up the rubbish from a picnic, putting out fires, and closing gates to fields where stock may be in pasture, many delightful places have been closed to picnickers and tourists.

To plan and prepare a picnic lunch for a number of people requires considerable work, and many times picnics are not a popular pastime because of this fact. An easy way to arrange a picnic is to make the menu, estimating the amount of each food needed, then to assign to each person a certain amount of one food to be prepared. Each person may then take her own dishes and the one prepared food, and the work of preparation is not difficult. Often the menu for a picnic is too elaborate and makes the work of preparation too difficult. Since touring has become such an important pastime in this country, it is desirable for each girl to know how to plan and prepare a picnic lunch, and to cook out-of-doors. Elaborate camping equipment can be purchased, but this is expensive, and as good times can be had with less equipment, preparing easily cooked foods and menus that are very simple.

HOME PROBLEMS AND QUESTIONS

Plan a menu which would be suitable for the Foods class to use for a picnic: (1) when all the foods are

cooked in the laboratory; (2) when part of the foods will be prepared out-of-doors. Estimate the amount of each food needed. Make a list of the dishes and other equipment needed in cooking or serving the lunch. Discuss methods of packing the lunch.

Plan several lunches that might be carried by Girl Scouts going on a hike; by Boy Scouts.

If you were going on a camping trip where it would not be possible to buy fresh meats, fruits, and vegetables more than once a week, plan menus that could be served for a week. Make a list of the foods needed for the week for four people.

What kind of clothes are preferable to wear on a picnic? Why? If clothing catches fire, how should the fire be extinguished.

What other foods than those mentioned have you seen cooked out of doors?

If you were entertaining a guest in your home, what sort of outdoor parties, other than a picnic, could you arrange for her entertainment if you lived on a farm?

Perhaps the Foods class can go on a picnic some Saturday and practice building fires and cooking.

LABORATORY EXERCISES

SERVE A LUNCHEON OR SUPPER

Suggested Menu: Cheese strata
Lettuce sandwiches
Dried peaches
Sponge cake

Estimate the cost of the meal.

Serve several luncheons or suppers, if there is time in the course.

THE CARE OF THE BABY

Perhaps you have a baby brother or sister or a baby cousin, or perhaps there is a baby at a neighbor's house that you can help to care for, thus assisting your mother, your aunt, or the neighbor. If babies are to be well, they must be cared for correctly, and it is the duty of every one to learn the essential rules. On those who care for a baby rests a big responsibility.

Everything around the baby should be very clean. The nursery or the room in which the baby sleeps must have good ventilation; it must have walls and floors which can be easily cleaned, and the furnishings must be of plain design, and of materials that can be kept clean. A baby basket, perhaps made from a clothes basket, may be the place in which the baby sleeps when small. Later he should have an enameled iron bed with high sides, which can be lowered. A baby should never sleep with an older person, but should always sleep alone. In mild weather the baby may take his naps in the baby carriage, on the porch or in the yard. If the porch is not screened or if the carriage is placed in the yard, it must be covered with mosquito netting to protect the baby from flies. A baby's bed should never be put where there is a draft from windows, doors, or an electric fan, but the windows must always be kept wide open when the baby is asleep. There should be plenty of sheets, so that the bed can be kept very clean. The mattress should be protected with rubber sheeting. Cotton or wool blankets may be used to keep baby warm.

A baby should go to sleep without attention; he should not be rocked or sung to sleep. If he is accustomed to this when a tiny baby, the mother will be saved much trouble later. The baby should take his

naps at regular times and should sleep a good many hours each day:

Baby 2 or 3 months old	18 to 20 hours out of 24
Baby 6 months old	15 to 16 hours out of 24
Baby 1 year old	14 to 15 hours out of 24
Baby 2 years old	13 to 14 hours out of 24

A baby's clothing should be comfortable. Baby clothes are now very simple in design, with no elaborate trimmings of lace or embroidery. The following is a list of the clothing needed in a layette:

6 slips — of lawn, nainsook, or dimity, made kimono-style and 26 inches long
1 dress — sheer material, perhaps decorated with a little handwork
3 flannel petticoats — of good grade of flannel, made princess style
3 shirts — of silk and wool or of cotton and wool fabric, second size
4 dozen diapers — made of 18-inch bird's-eye cotton or outing flannel, hemmed
3 pairs stockings — merino
3 kimonos — of wool challis, albatross, or similar fabric, made wrapper-style
3 nightgowns — of outing flannel, or ready-made of knitted material, made wrapper-style
3 night petticoats — of outing flannel, made princess-style
1 sleeping bag — of double-faced eiderdown, made with hood and broad square shoulders

Clothing should be kept very clean. Baby clothes should never be starched, because the starch makes the materials stiff so that they scratch the baby's skin. All flannel garments should be washed carefully, so that

they will not shrink or become harsh in texture. They may be dried on wooden forms made for the purpose (see section on Healthful Clothing). A wet diaper should never be dried and used again, because it may be the cause of chafing the baby's body. Diapers should be washed thoroughly in hot soapsuds, boiled, rinsed several times in clear water, and dried in the sun;

"A Basketful of Baby"

The cheap market-basket makes a convenient bed for a little baby and can also be used in carrying the baby about

they do not need ironing. A baby should be taught not to wet or soil his diapers. After he is a few weeks old he should be placed on a small chamber every two or three hours, and he can soon be taught the habit of cleanliness.

A baby should be bathed regularly every day, giving him a sponge bath for the first few weeks; a tub bath may be given him after he is a few weeks old. In cold weather it is particularly necessary that the room in which the bath is given be very warm. Having the tub at table height makes the giving of the baby's bath much easier. A bathing and dressing table should be

large enough to furnish space for the tub and the bathing pad, and should have drawers to hold the dressing basket and clothing. The following directions are important to remember when caring for a baby:

1. Feed and bathe the baby at regular times.
2. Put him to sleep at regular times in a well-ventilated room or on a porch.
3. Change his diapers as soon as they are wet.
4. Never take a baby under three months of age outdoors in severe weather.
5. Adjust the clothing to suit the weather conditions. Often babies are cross because they are too hot in warm weather.
6. Always protect the baby's eyes from strong light. The bed should be placed so that the baby does not face the light.
7. Avoid excitement. Never frighten a child. Never take a baby into a crowd, to a theatre or to similar places. Never tickle, toss, or bounce a baby. Avoid loud, harsh noises. Keep the baby quiet.
8. Always handle a baby very carefully. Support the head and back of a little baby when you lift him. Never lift a child by the arms or drag a small child by the arm.
9. See that the baby has at least one bowel movement every day.
10. Consult the doctor immediately if the baby is not well. Do not give him medicine unless prescribed by the doctor.
11. Never kiss a baby on the mouth, but rather on the head or back of the neck.
12. Never take the baby where there are sick people.
13. Baby's toys should be of a kind which can be cleaned easily, from which he cannot suck the

paint, and which have no sharp edges or points to hurt him. Do not allow him to suck a "pacifier", since this is apt to spoil the shape of his mouth. A baby should not be permitted to suck his thumb for the same reason. Bags, which have been thoroughly washed, may be sewed to the ends of sleeves to break the habit.

14. Do not encourage the baby to stand until his legs are strong. Why?
15. Weigh the baby once a week, to be sure that he is gaining the correct amount in weight.
16. Wash your hands before doing anything for the baby; this guards against disease.

HOME PROBLEMS AND QUESTIONS

Perhaps a nurse can talk to the girls about the care of a baby, giving a demonstration on bathing a baby, how to lift and hold a baby, and on other points connected with its care.

Have you ever made a slip or petticoat for a baby? Ask the sewing teacher about the kinds of seams and finishes which should be used on such a garment. Perhaps the class can make baby clothing for some needy mother about whom the public health nurse knows.

Collect pictures of equipment you have seen advertised to be used in caring for a baby. Perhaps you can find pictures of nurseries furnished in attractive ways. Discuss these in class. Make a booklet on "The Care of Children", and in this place pictures and suggestions for the care of a baby or small child.

REVIEW QUESTIONS

1. How many hours out of the twenty-four should a baby one year old sleep? A baby two years old?
2. Why should a baby sleep alone when possible?

3. Why is it necessary to support the back and head when lifting a little baby?

4. How may one tell when a baby is not well?

5. Why should one never kiss a baby on the mouth?

6. Why is it necessary to feed a baby very carefully? What may be the results of careless feeding?

7. Make a schedule for the care of a baby six months old.

A Page from the Booklet on "The Care of Children"

THE BABY'S FOOD

The best food for a baby is its mother's milk, since this has in it the foodstuffs and vitamins that the baby needs. When possible, the baby should be fed entirely on the mother's milk until it is nine months old and partially for the next three months. When the mother cannot nurse her baby, other milk must be used, the milk from the cow or goat being the cheapest and best. We call this "artificial feeding", and the important

thing is to have pure, fresh milk for this purpose. Certified milk or milk of Grade A can be bought in cities and is the safest milk to buy from a dairy. Milk for feeding babies should always be bought in bottles and should be from healthy cows, "tuberculin tested" — which means that the cows do not have tuberculosis, a disease that can be carried by milk. Milk should be kept at a temperature of about 50° F., preferably in an ice-box or in an iceless refrigerator, or it may be set in running water in warm weather. Cow's milk will need to be "modified" or changed, usually, by the addition of sugar and sterile (boiled) water, or cereal water made from oatmeal or barley. A physician should be consulted and his directions followed in modifying milk.

Nursing bottles are of two general types: one has a small neck, and the other is a straight bottle without a neck. Both are round, with no corners in which stale milk may collect. Either type may be used, but the straight bottle is recommended when the baby will nurse from it. The nipple should have a hole small enough so that the milk drops through it rapidly; it is too large if the milk runs through in a stream. It is more convenient to have enough bottles and nipples so that there can be one for each feeding during the day, thereby making it possible to sterilize and fill all the bottles at one time. A bottle and nipple should be used only once after sterilizing. After a bottle has been used, rinse it thoroughly with cold water, then fill it with water to which has been added a little soda or borax, and let it stand until all the bottles are prepared for the next day. The nipples should be rinsed and placed in a glass jar filled with a borax solution.

To prepare the bottles for the milk, wash them in hot soapsuds, using a bottle brush, and rinse in clear hot water. Place the bottles in a pail or kettle of warm

water, in the bottom of which is a wooden rack or cloth to keep them off the bottom of the kettle. Heat the water to boiling-point and boil five or ten minutes. Nipples should be scrubbed with a brush, both inside and out, and may be sterilized by boiling five minutes, after which they should be put in a covered, sterilized jar. After the milk has been prepared, the bottles should

GIRLS LEARNING TO BATHE A BABY CORRECTLY

THE WATER MUST BE AT THE CORRECT TEMPERATURE, SO A THERMOMETER IS NECESSARY. PLACING THE TUB, AND PAD ON WHICH BABY IS LAID, AT TABLE HEIGHT MAKES THE WORK EASIER

be drained and filled, using a graduate to measure the milk so that the correct amount for one feeding can be put in each bottle. The bottles then are corked with absorbent cotton or with corks that have been dipped in boiling water to sterilize them, or they may be covered with clean white paper held on with an elastic band. For the straight-sided bottles use caps that can be purchased for this purpose.

Set the bottles upright in a pail having a false bottom

(see page 261). Put enough water in the pail to come up to the level of the food in the bottles. Punch a hole in the cap of one bottle and insert a clean thermometer far enough so that the bulb is in the milk. Heat the water in the pail until the thermometer registers 145° F. Remove the thermometer and add enough cold water to the water in the pail to reduce the temperature to 135° F.; cover the kettle or pail and let the bottles stand in it for thirty minutes. Then cool the bottles and keep in a temperature of 50° F. until feeding time.

When it is time for feeding, wash your hands before preparing the bottle. Remove the cork from the bottle of food, put on a sterilized nipple, and heat the food by setting it in a kettle of hot water deep enough to come above the food in the bottle. Shake the bottle well, then test the temperature by letting a drop or two fall on your wrist; it should feel warm, but not hot or cold. Do not handle the nipple more than is necessary, and never put it in your mouth. The baby should drink at one time all of the milk in the bottle, which should be taken away as soon as it has finished.

It seems best to feed some babies every three hours, while others need feeding only every four hours. A baby may be trained to sleep all night without feeding. For the first two months it may need to be fed at ten o'clock at night, and then not until in the morning at the scheduled time; and after it is two or three months old it should sleep all night without feeding. A baby must be fed at regular hours and, when necessary, be wakened to take its food.

A baby should be given water several times each day. The water should be lukewarm (98° F.) water that has been boiled. Why?

Orange juice is given to artificially fed babies, beginning when they are three months old, using one tea-

spoonful and increasing to three or four tablespoons by the time they are six months old. The orange juice should be given once a day, one hour before a feeding, usually in the morning. It should be diluted with an equal amount of boiled water.

After the baby is six months of age it may be given small amounts of other foods. It is usually the best plan to consult the physician about the foods and the amounts to be given. An infant must be fed correctly because careless or incorrect feeding causes digestive disturbances.

HOME PROBLEMS AND QUESTIONS

Send to the Children's Bureau, U. S. Department of Labor, Washington, D. C., and ask them for bulletins on Infant Care and the Care of Children. Probably these bulletins are already in the school library. In them find the suggestions given for feeding a baby. Discuss these. Make a schedule for feeding a baby six months old; one twelve months old.

If you have a baby brother or sister, perhaps your mother will let you help in preparing the baby's bottles or any other food that is to be given.

LABORATORY EXERCISES

FOR THE BABY

OATMEAL WATER

3 tbsp. oatmeal
1 qt. water
$\frac{1}{16}$ tsp. salt (should not be used if baby is under 6 months of age)

Heat water to boiling-point; add salt; slowly stir in oatmeal. Cook one hour. Strain.

BARLEY WATER

3 tbsp. pearl barley
1 qt. water
$\frac{1}{16}$ tsp. salt (should not be used if baby is under 6 months of age)
Prepare in the same manner as described for oatmeal water.

GRUELS

Proportions for gruels:

Barley: 1 tbsp. barley flour
2 tbsp. cold water
Cook 30 minutes
1 c. scalded milk
Salt

Oatmeal: $\frac{1}{4}$ c. coarse oatmeal
$1\frac{1}{2}$ c. boiling water
Salt
Milk to thin to desired consistency
Cook 4 hours

Corn meal: 1 tbsp. corn meal
2 tbsp. cold water
$1\frac{1}{4}$ c. boiling water
Salt
Cook $1\frac{1}{2}$ hours

Prepare in same manner as oatmeal water, except that when milk is used it should be added at the end of the cooking.

VEGETABLE SOUP FOR BABY

Such vegetables as spinach, carrots, beet greens, turnips, celery, chard, and lettuce are good to use for such soups. Vegetables must never be served raw, but must be prepared in the following manner:

Chop the vegetables very fine or put them through the meat-grinder; place in saucepan and cover with water; add salt, using one teaspoonful to a cup of vegetables; boil very slowly until very tender.

For little babies, strain the liquid from the vegetables, but do not use any of the pulp.

For older babies, the vegetables may be put through the strainer, and one or more teaspoonfuls may be added to a cup of the liquid.

REVIEW QUESTIONS

1. What is "modified" milk? Why should a physician be consulted about the formula for such milk?
2. What is the best food for a baby?
3. Give the directions for preparing a baby's food when it is artificially fed.
4. Why is it important that the baby have plenty of water?
5. Why is orange juice given to a baby? How should it be prepared?
6. What foods are suitable for a child six months of age? For a child one year old?

CARE OF THE SMALL CHILD

If a person is to be healthy and strong when grown up, it is very important for him to receive excellent care during babyhood and childhood. The child under six years of age is often spoken of as the "pre-school child", and a great deal of attention is now being given to training mothers in the proper methods of housing, feeding, clothing, and training children of this age.

A Healthy, Happy Boy with His Dog
His mother has evidently always given him the best of care

Some important things to remember in the care of the pre-school child are these:

1. The child must have plenty of fresh air every day. At night it must sleep in rooms with windows wide open and must play in rooms that are aired thoroughly each day during the winter,

and must be allowed to go out-of-doors to play or to walk every day when it is not stormy, even during the winter months.

2. The child must have plenty of sleep each night, going to bed early and at a regular time. It should take a nap of from one to two hours in the daytime. It is better for every child to sleep in a bed by itself.
3. When possible, a child should be given a bath every day. If this is not possible, at least two baths a week should be given. The face and hands should always be washed before meals and at bedtime, and the hands should always be washed after going to the toilet. The teeth should be washed at least twice a day and always before going to bed at night.
4. A child should have a natural bowel movement every morning after breakfast, and it should be the duty of some one to see that it goes to the toilet at this time every morning.
5. The clothing of the child should be very comfortable and should never pull or pinch at any point. All the daytime clothing should be removed and night clothing put on when going to bed. Allowing the child to sleep in the daytime underwear is a very bad practice. Underclothing and stockings should be changed at least twice a week, and oftener is better. In winter, light-weight or summer clothing may be worn in the house when it is heated with an efficient heating plant, but out-of-doors it should wear very warm wraps, leggings, and rubbers. A child should always wear rubbers in wet weather. The shoes should be comfortable, never too short, and should fit the feet.

6. The child needs some one to direct its play, since it may be taught many things worth while in play. Group play (playing with other children) is helpful to the "pre-school child." This is the age when the kindergarten or nursery school can be very helpful. Children should be taught through play to be fair, to be generous, to be thoughtful of others, to work with other people. The child likes to imitate others and likes to dramatize (act) the stories read or the things it has seen or heard. Reading or telling stories to children is an excellent way to amuse them and to teach them to like to read. It is very important to choose stories that will not frighten the child.

A Warm Outfit for a Little Child to Wear Out-of-doors in Cold Weather

7. Instructions must be given to the child in regard to correct manners at the dining-table and elsewhere. It should be taught to obey and should never be coaxed or bribed. It should be taught to be kind and courteous to others, to be able to do things for itself, to be truthful, and to respect the rights of others.

The meals for the child between babyhood and six years should be very carefully planned, so that it may receive foods needed for growth. It must be given a variety of foods each day and should not be allowed

to make its entire meal from one or two articles. The diet each day should contain some of each of the following types of foods: (1) milk; (2) eggs, fish, fowl, or meat; (3) bread and cereals; (4) vegetables; (5) fruit; and (6) fats.

Milk and water. At least a pint and, preferably, three glasses of milk should be taken daily. It may be served in cocoa occasionally. Milk should not be "ice cold" when served to children. They should be given plenty of water, preferably between meals.

Eggs, fish, fowl, or meat. Eggs, poached, coddled, or soft-cooked, are especially good for children. Meat should not be served in large quantities or too often; for the child under two years of age scraped beef or lamb or minced chicken should be the only meat used. It should be broiled, roasted, or stewed, never fried.

Bread and cereals. Oatmeal is very good for children. Whole wheat or Graham bread, well-baked white bread, dry toast, zwieback, crackers, or Graham crackers are desirable breads for children to eat. Hot breads, pastries, and rich cakes should not be served to children.

Vegetables. Baked and mashed potatoes, and well-cooked rice, may be served as the starchy vegetable. At least one green vegetable, especially spinach and carrots and the leafy vegetables of mild flavor, must be served every day. For children under two years of age the vegetables are finely divided or mashed, or are served in soups.

Fruit. Orange juice is especially good for children. All fruit must be ripe when served to children, and for very small children it is usually better digested when cooked. Dried fruits may be served in the child's diet.

Fats. Butter should be used freely in the child's diet.

Sweets. Simple desserts such as custards, junket, blanc mange, rice pudding, plain ice cream, or cooked

fruits should be served to the small child. Candy, if used at all, should be served at the close of a meal, and then only one or two pieces should be the allowance. Children should not eat candy between meals.

Foods which should never be served to children:

1. Tea or coffee, or iced beverages
2. Nuts or other foods requiring careful mastication (chewing)
3. Fried foods
4. Pastry
5. Corn or raw vegetables
6. Veal or pork (except bacon)
7. Dried fish or dried meats
8. Pickles
9. Hot breads, griddle cakes, or waffles
10. Poorly cooked vegetables and cereals
11. Rich cakes or desserts
12. Foods that are not pure or are of poor quality

Children should eat their meals at regular hours each day. They should not be allowed to "piece" on candy, or other sweets, between meals. If they are hungry between meals, they may be given a slice of bread. The child from two to six years of age needs three warm meals a day, while the child from one to two years needs to be fed oftener. The day's food should be divided fairly evenly between the three meals, and foods representing each of the five food groups (see page 50) should be served at each meal. Dinner should be at noon.

Children should be taught to masticate (chew) their food thoroughly, and plenty of time must be allowed for eating each meal. They should be taught to eat the foods that are good for them. They should not be forced to eat, but when they do not eat for several

meals it is a wise plan to consult a physician to find out the reason for this loss of appetite.

Children should be taught good table manners. They copy the manners of their parents, brothers, and sisters,

A Child Should Have Regular Meals at Regular Hours

so it is very important for the older members of the family to use only good manners. When small children can be served at a low table with chairs that are the correct height for them, it is easier to teach them good

table manners, and it is also easier to keep them from seeing the foods that they are not allowed to eat.

HOME PROBLEMS AND QUESTIONS

Use the bulletins on Child Welfare that were obtained from Children's Bureau and others that the teacher can

The Children Are Eating Breakfast Out in the Yard on Their Little Table Which is of a Height Permitting Them to Use Chairs Low Enough to Permit Them to Put Their Feet on the Ground

obtain from (1) the Superintendent of Documents, U. S. Department of Agriculture, Washington, D. C.; (2) the Bureau of Education, Department of the Interior, Washington, D. C.; (3) the Federal Board for Vocational Education, Washington, D. C.; (4) possibly from the State University.

After studying these, plan the meals for a day for a child four or five years old; for one two years old.

If you have little brothers or sisters, perhaps your

mother will allow you to prepare the meals for them for one day. In what other ways do you help with the care of the children?

What foods do you eat that are not good for your little brothers or sisters?

What is the meaning of the word "malnutrition"? Have you ever heard this word used? What is meant by this statement, "That child is suffering from malnutrition"?

In what ways may one tell when a little child is ill? What are the contagious diseases that are called "children's diseases"? What precautions should be taken to keep children from having these diseases? Consult the school nurse or a physician.

Perhaps some mother will bring her four or five year old child to school, with some of its clothes, and show the class how these are made and how to tell when they fit. Why should small children wear wash dresses and suits? How do ready-made garments and home-made garments for children compare in price? When is it the best plan to buy ready-made clothing?

LABORATORY EXERCISES

SOME GOOD FOODS FOR SMALL CHILDREN

SPINACH SOUFFLÉ

$1\frac{1}{4}$ c. cooked spinach, chopped fine
2 eggs
1 c. No. 3 white sauce (made with milk)

Beat the yolks of the eggs. Stir the white sauce slowly into the eggs and add the spinach. Beat the egg-whites until stiff. Fold the whites very carefully into the mixture. Pour into a greased baking-dish. Bake in moderate oven (350°–400° F.) until firm. Why must the egg-whites be "folded in" carefully?

POTATO SOUFFLÉ

4 large white potatoes	½ c. milk
1 tbsp. butter	¼ tsp. pepper
4 eggs	1 tsp. salt

Boil and rice the potatoes. Add the milk, butter, and seasoning. Beat the egg-yolks and add to the mixture. Beat the egg-whites until stiff and fold into the mixture. Pour into buttered baking-dish. Bake in moderate oven (350°–400° F.) until surface is browned.

RICE PUDDING

1 qt. milk	½ tsp. salt
⅓ c. rice	⅓ c. sugar
1 tsp. vanilla	½ c. raisins

Wash the rice thoroughly. Add the other ingredients, leaving out the raisins. Pour in a buttered baking-dish; put bits of butter over the top and cover the dish. Bake three hours in a slow oven (250°–300° F.) or fireless oven, stirring occasionally during the first hour. Add the raisins one-half hour before the pudding is done, leaving the dish uncovered.

TAPIOCA CREAM

1½ tbsp. minute tapioca	1 tsp. vanilla
1½ tbsp. sugar	1 c. milk
⅛ tsp. salt	1 egg

Heat the milk in top part of double-boiler. Pour this slowly over the tapioca, sugar, and salt, which have been mixed together. Return to double-boiler and cook twenty minutes. Beat the egg-yolk, add slowly to the mixture, stirring constantly. Add vanilla, then fold in the egg-whites, which have been beaten until stiff. Chill before serving.

What other dishes that have been prepared in the laboratory are good dishes to serve to children?

THE DINNER PLAN

Dinner, in most homes, is the "heaviest" meal served during the day because it consists usually of a greater variety of food than do the other two.

The home dinner may be planned in one of three ways: (1) Meat, with one or two vegetables; bread and butter with jam, jelly, or preserves; dessert. (2) Meat, with one or two vegetables; salad; bread and butter with jam, jelly, or preserves; dessert. (3) Soup; meat, with one or two vegetables; bread and butter with jam, jelly, or preserves; salad; dessert. A very simple meal is a "one-dish meal"; that is, a combination dish, consisting of both meat and vegetables, served with bread and butter, and perhaps a sweet or dessert of some kind.

The plan which is best to use for dinner depends upon several things: (1) what kind of meals have already been eaten during the day, (2) what amount of money can be spent for food, and (3) what amount of time should be spent in getting the meal.

When meals are planned, they should be arranged for the whole day at least. If a very light breakfast and a simple luncheon or supper are to be served, it is necessary to have a heavier dinner than when a good deal of heavy food (food containing much food value) is served for breakfast, luncheon, or supper. Then, too, the kinds of food served in any one meal must be considered when the others are planned, because variety is necessary in the diet. Foods used often should be varied by preparing them in different ways; for example, potatoes should not be served mashed every day for dinner, but should be served in other ways on different days.

It is not necessary to have soup at the beginning of a dinner, nor is it necessary always to have a dessert at

the end. The housewife should not serve a heavy dessert, such as a pie or rich pudding at the end of a meal in which a meat, vegetables, and a salad have been served. It is better to serve a dessert of fruit, or plain gelatine pudding, at the end of such a meal.

Too many vegetables should not be served at dinner; the general rule of serving two is a good one to follow. Lettuce is usually served with any salad and would make the third. In choosing the two, it is better to select one starchy and one green vegetable, the two being pleasing in taste when eaten together. When a vegetable salad is served, it can take the place of one of the cooked vegetables.

Only one kind of meat should be served. A meat or fish salad should not be served when another meat dish is being used. Eggs are not needed when meat is served, nor should meat be served with baked beans.

The same vegetable should not be served twice in the same meal; for example, do not serve potatoes in a hot dish and also in a salad, nor rice as a vegetable and in a rice pudding, nor tomato salad and tomato sauce for the meat. Do not serve more than one kind of "sweet" at a meal.

When a housekeeper must do everything herself, without help, she should consider the length of *time* needed in the preparation of a meal. Some dishes require a much longer time in their preparation than it is right for the housekeeper to spend when there are others more easily prepared that are quite as good. No person should spend too large a share of her time in cooking, as there are other things as important to be done. It is necessary to prepare enough food and to have it well cooked, but "fancy" cookery takes too much time when the housekeeper does all of the household work in her home.

It is wise to think about the amount of fuel used in getting a meal if other than a coal or wood range is used. Sometimes it is economical to plan a meal with all the main dishes baked in the oven, or cooked in the steam cooker, or in the fireless cooker, instead of cooking one dish in the oven and one or two on top of the stove.

To plan, cook, and serve a good dinner is a difficult piece of work, and any girl deserves praise when she can do this at home without her mother's help.

"Company" dinners are sometimes too elaborate, requiring too much time for preparation and too much money for food. When the home-maker who does her own housekeeping plans a meal for guests, she should remember that the guests came to visit with her and that they do not want to find their hostess too tired to talk, or so busy in the kitchen that there is no time for visiting.

The following suggestions may be considered in planning an informal company dinner. Formal dinners are not given unless there are plenty of household helpers to do the work and attend to the service.

1. Follow plan 2 or 3 given for the home dinner in planning a dinner for company. There is no need of having a greater variety of food than is often served to the family.
2. If you know the guest to be especially fond of a certain food or one cooked in a particular way, this may be served.
3. Plan a menu that makes possible the preparation of some foods to be served cold, which can be gotten ready before the arrival of the guests. Often the dessert or salad may be this kind of dish.
4. Plan to serve foods that do not require "last-minute preparation." For example, a broiled steak requires cooking just before serving,

while Swiss steak may be prepared before the arrival of the guests and requires only to be put on the platter for serving.

5. Use your best table linen and china and make the table as attractive as possible.
6. Serve your choicest preserves, jams, or pickles if you care to do so, but serve only one kind of pickle and one kind of "spread."
7. Arrange all the dishes so that the serving of courses may be done easily. When the hostess attends to the serving, the compromise or combination service should be used.
8. After the meal, the table may be cleared, the food put away, and the dishes stacked to be washed after the guests leave, if they are to stay for only one meal.

When entertaining a group of people for a meal, it is often easier to arrange for a buffet supper or luncheon than to attempt to plan a dinner for such a group. The food for the first course of a buffet meal may be placed on the dining-table and each guest may be asked to serve himself or herself to whatever is desired; or the guests may be seated around the room and the foods served at the table, then the plate taken to the guest. When the first course is finished, all the plates should be taken from the guests and all dishes containing foods should be removed to the kitchen. The dishes containing the foods and the dishes needed for the second course are then placed on the table, and the service of the meal is continued. Usually two courses are enough to serve at such a meal. The foods selected must be such as can be easily eaten with one hand, since the other must be used for holding the plate. The menu on page 204 is suggestive of the type served for buffet meals.

FIRST COURSE

Creamed chicken in timbales
Glazed sweet potatoes
Perfection salad in lettuce cups
Buttered rolls
Peach pickles

SECOND COURSE

Lemon tarts
Nuts Candies
Coffee

LABORATORY EXERCISES

LEFT-OVER DISHES

Experiments: 1. Place the kettle of fat over the fire and heat until it begins to "foam" on the surface. Place a cube of bread in the fat. After one minute remove the bread; break it apart. Has the bread absorbed the fat? What is the temperature? Use the thermometer.

2. Continue heating the fat until blue smoke rises from the surface. Place another cube of bread in the fat. After one minute remove the bread; break it apart. Has the fat been absorbed as in the bread used in No. 1? Which temperature would be best to use in frying croquettes? Can you explain why? Would you want the fat as hot for frying doughnuts? Why?

CROQUETTES

Croquettes may be made of left-over meat, vegetables, or cereals, alone or combined, and may be mixed with thick gravies, No. 4 White Sauce, or egg. The croquettes should be mixed, the hot sauce added, and then allowed to cool. Be careful to add only enough sauce or eggs to bind together the ingredients.

When the mixture is cold, form the croquettes into the desired shape, either ball, pyramid, or roll. Beat an egg slightly, add two tablespoons of water, and mix thoroughly.

Use bread crumbs that are very fine. Roll the croquette in the egg, then in the crumbs, then in egg, and then in crumbs. Place croquettes in frying-basket and lower the basket carefully into the hot fat. Fry until brown. Remove croquettes and place on crumpled brown paper to drain. Be careful not to pierce or break the crust on the croquette, either while it is in the fat or when removing it from the fat.

A Convenient Deep-fat Kettle with Basket

The following are some combinations used in croquettes:

SALMON CROQUETTES

$\frac{1}{3}$ c. No. 4 White Sauce
$\frac{2}{3}$ c. canned salmon, flaked
Lemon juice, paprika, and salt to taste

POTATO CROQUETTES

1 pt. mashed potatoes
2 tbsp. butter
$\frac{1}{4}$ tsp. salt
1 tsp. chopped parsley
1 egg yolk or $\frac{1}{2}$ egg
Onion juice if desired

BEEF AND RICE CROQUETTES

1 c. finely chopped beef
$\frac{1}{3}$ c. cooked rice
$\frac{1}{8}$ tsp. pepper
Tomato sauce or left-over gravy

SCALLOPED HAM AND EGGS

2 hard-cooked eggs
$\frac{1}{4}$ c. chopped ham
1 c. No. 2 White Sauce
Buttered bread crumbs

In the bottom of a buttered baking-dish, or ramekin, place a layer of crumbs, then a layer of white sauce, then a layer of the eggs sliced, then white sauce, then ham, then crumbs;

continue until the dish is filled. Finish with a layer of crumbs. Bake in a moderate oven until crumbs are browned and ingredients thoroughly heated through.

REVIEW QUESTIONS

1. What is the material used for binding together the ingredients in each of the croquette recipes?
2. What would be the result if too much white sauce were added to the croquette mixture?
3. What are other recipes for using left-overs?
4. Give three general plans for dinner.
5. What points must be considered when planning a dinner?
6. Should meals be planned singly or for the day? Why?
7. Give the general rules to follow in planning the vegetables for dinner.
8. What are some reasons for not serving more than one meat for dinner?
9. What should not be served at a dinner where meat is used?
10. Should the same food be served twice in one meal? Give examples.
11. In what way may fuel be saved in getting a dinner?
12. Plan some dinners that would be economical as to price and time, and that would be pleasing in taste and appearance.
13. State rules to be followed in planning a company dinner when the housekeeper does all of the work.
14. Plan for company a dinner that can largely be prepared in the oven. Why would this be a good kind to serve?
15. Plan a buffet luncheon which may be served to the mothers of the girls. Make a list of the dishes and silverware needed; make a list of supplies needed; plan the table decorations.

VEGETABLES

The term "vegetable" includes a large class of foods which are used in great quantities in our diet. Vegetables of many kinds can now be had at all seasons of the year because the canned and dried vegetables, like the fresh ones, can be shipped successfully from one part of the country to another. In large city markets a great variety of fresh vegetables can be bought, even

in midwinter. Hot-house and imported vegetables are expensive and in many cases not of good flavor. Lettuce is now used by many households at all seasons of the year; it is usually good when carefully selected, and it satisfies the desire for something green during the winter.

Vegetables are important in the diet because they furnish a large share of the mineral matter needed by the body. They supply carbohydrates, in the form of starch and sugar, and also supply bulk in the diet. There are vitamins in many vegetables, especially in the leafy vegetables, such as spinach, lettuce, and cabbage.

There are several classifications given for vegetables; perhaps the best one to use is that which divides them into green and starchy vegetables.

The green vegetables are sometimes called watery or succulent vegetables. They contain very little starch, but are valuable as food for their mineral matter, and for the cellulose and the vitamins they supply. They are useful because they furnish variety in our meals. Such vegetables as lettuce, cabbage, Brussels sprouts, celery, cucumbers, radishes, onions, and tomatoes are green vegetables.

Green vegetables are of two kinds, (1) those with a mild flavor, such as celery and squash, and (2) those with a strong flavor, such as cabbage and onions.

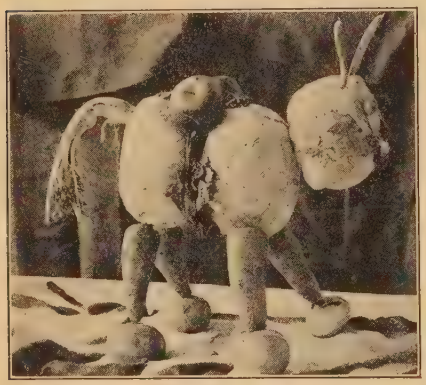
Steaming is a good way of cooking vegetables, if all the food value is to be retained. Mild-flavored vegetables taste well when steamed, or when boiled in just enough water to keep them from burning. The strong-flavored vegetables are of better flavor when cooked in a quantity of water.

The starchy vegetables are such vegetables as potatoes, corn, sweet potatoes, and parsnips; also the legumes which have already been studied.

Baking is an excellent method for cooking vegetables which taste well when prepared in that way. Boiling vegetables, such as the potato, with the skin on, prevents the loss of food value.

Vegetables are cooked for several reasons: (1) to soften the cellulose, (2) to change or improve the flavor, (3) to make the starch easier to digest, (4) to vary the way of serving them.

Vegetables are often cooked for too long a time. This spoils the flavor and perhaps the appearance, in addition to causing a loss of food value. They should be cooked until tender and not allowed to stand after they are done. Cabbage is a vegetable usually cooked for too long a period, in which case it becomes strong in flavor, tough, and very different in appearance.



"Spark Plug", the Health Animal
He is made of vegetables which every child should learn to eat

When vegetables are purchased, the fresh crisp ones should be selected. Withered vegetables are not good in flavor and are often poor in texture. Many vegetables, such as corn, green peas, and string beans, retain their good flavor but a very short time after being gathered. If withered vegetables must be used, they may be improved by long soaking in cold water before cooking. It is always best to go to the market and select vegetables, rather than to order them by telephone, because one can then select the best.

When selecting vegetables, the following points will be helpful:

1. Green beans should be crisp, and the pod should snap easily. They are usually sold by weight, and are best when cooked very soon after gathering.

2. Green peas should have a green pod, the seed tender when pressed with the finger nail, and the pods well filled. They are sold by weight and are best when cooked soon after gathering.

3. Green corn should have a fresh green husk, brown silk, the ears well filled, and the grain tender and full of juice when pressed with the finger nail. Corn is sold by the dozen ears, and has a better flavor when fresh from the garden.

IT IS A WISE PLAN TO MAKE THE ACQUAINTANCE OF THESE THREE BECAUSE THEY ARE SOME OF THE FOODS WHICH SHOULD BE USED OFTEN

4. Young carrots or fresh beets should be firm and have tops that are green and fresh. They are often sold by the bunch, the number varying in the bunch. Winter carrots are sold by weight.

5. A head of lettuce should be solid when pressed, and not have a number of outer leaves that must be thrown away. Leaf lettuce should be fresh and of a light green color, without old and coarse leaves. It is sold by weight usually; sometimes by the bunch or by the head.

6. Celery should be crisp, tops not wilted, and outer stalks neither woody nor brown in color. It is sold at so much a stalk.

7. Spinach leaves should be green and not wilted, nor the stems dry in appearance. Spinach that is covered with dirt or sand is difficult to clean, and it is better not to buy it when in this condition. Spinach and other "greens", such as Swiss chard, are usually sold by the pound, sometimes by measure.

8. A head of cabbage should be solid and with few leaves that cannot be used. Cabbage should be sold by weight, since the heads vary so in size.

9. Radishes should be firm, tops not wilted. They are sold usually by the bunch.

10. Tomatoes should be thoroughly ripe, smooth, and without spots that, when removed, will spoil the shape of the tomato. They are sold by the pound in small quantities, and by the measure in large quantities. If tomatoes are to be stuffed or used whole for salads, it is desirable to select those of uniform size.

Vegetables should be kept in a cool, dry place. All withered or dried leaves and tops that are not to be used should be removed before putting vegetables away. Vegetables to be kept for winter use should be stored in a dry, cool, dark place, where they will not freeze. Beets, carrots, parsnips, and turnips are sometimes covered with sand to keep them fresh. When there is a good place to keep such foods, it is economical to buy them in quantity in the fall, when they are cheaper than during the winter months. On the farm, where vegetables are grown, a considerable number are usually stored.

Green vegetables are best in flavor when eaten soon after gathering, and for this reason many city and town people like to buy from "road-side markets" when driving through the country.

HOME PROBLEMS AND QUESTIONS

Make a list of all the vegetables you know.

Divide the list into the following groups:

1. Those that may be baked.
2. Those that may be creamed.
3. Those that may be scalloped.

Can any of the vegetables be put in more than one class?

Make a list of the vegetables that can be eaten raw. How are they prepared?

Make a list of the green vegetables, and one of the starchy vegetables commonly used. Use Bulletin No. 28, "The Composition of American Food Materials", obtained from Superintendent of Documents, Department of Agriculture, Washington, D. C., to find to which class they belong.

What is the price by the pound of the following: onions, carrots, turnips, parsnips, potatoes, sweet potatoes?

Make a list of the number of each in a pound. How may this list be used?

What is the price by the can of peas, tomatoes, and corn? Does the price vary with the different brands? Can you give reasons why this might be? Read the label on a can of vegetables. What is stated on the label? Why should one read the label?

Bring to class one or two good recipes for preparing vegetables which have not been used in class. Let every member of the class copy the recipes on cards to be put in the card-file cook book. Perhaps your mother will let you prepare some of these at home. How many people does each recipe serve? Write this information on the recipe card. Report your success to the class.

TIME TABLE FOR BOILING FRESH VEGETABLES

Asparagus	30 to 45 minutes
Beans (string)	2 hours
Beets	1 hour
Cabbage	30 minutes
Carrots (diced)	20 minutes
Cauliflower (in sections)	20 to 30 minutes
Corn (on cob)	12 to 15 minutes
Lima beans	45 minutes
Onions (whole, medium size)	30 to 40 minutes
Peas	20 to 30 minutes
Potatoes (whole, medium size)	30 to 45 minutes
Spinach	15 to 20 minutes
Sweet potatoes (medium size)	30 minutes
Turnips (whole, medium size)	30 to 45 minutes

LABORATORY EXERCISES

SEVERAL DIRECTIONS FOR COOKING VEGETABLES

Boiling:

1. Put the prepared vegetables into boiling salted water.
2. Use one teaspoonful salt to one quart water.
3. Boil vegetables with a strong flavor in uncovered saucepans or kettles. Why?
4. Do not allow the water to boil rapidly, but keep it boiling gently.
5. To test the vegetables, pierce with a steel fork having small tines with a sharp point.
6. Remove vegetables from water as soon as done, when they should be placed in a warm place to dry for a few minutes.
7. The water in which vegetables have been boiled may be used in making soups.

Steaming:

1. Have water below steamer boiling hot before putting in vegetables and add more boiling water, if needed, while vegetables are cooking.
2. Add the salt to the vegetables in the steamer.

3. Strong-flavored vegetables are not so good when steamed as when cooked in boiling water.

Baking:

1. Mild-flavored vegetables are good baked.
2. Place prepared vegetables in shallow pans and bake in oven until tender when pierced with a fork, or, for potatoes, when pressed between the fingers.
3. Pierce potatoes with a fork to allow the escape of steam. This is to keep the potatoes from becoming soggy.

VEGETABLES

BAKED SQUASH

Wash the outside of a Hubbard squash. Cut into pieces about three inches square, or into any shape desired. Remove the seeds. Sprinkle the inside of each piece with a little salt, pepper, and sugar. Place on a shallow pan and bake in oven until squash is tender and slightly browned on top.

BAKED CORN

1 can corn	1 tbsp. butter
1 pt. milk	2 eggs
½ tsp. salt	1 tbsp. sugar
⅛ tsp. pepper	Buttered bread crumbs

Chopped green peppers, if desired

Beat the eggs slightly, add milk, sugar, salt, and pepper: mix thoroughly. Add the corn. Pour the mixture into a buttered baking-dish, add the butter and cover top with bread crumbs. Set in a pan of water. Bake about forty-five minutes in a moderate oven (300°–400° F.).

Would less time be required if this were baked in ramekins? Why?

CARROTS AND PEAS

Wash and scrape a carrot. Cut into dice, place in boiling salted water; boil gently until the carrot is easily pierced with a fork. Do not cover the saucepan, and use as little water as possible. When the carrot is done, drain it from the water; add it to an equal quantity of drained canned

or fresh peas which are hot. Pour melted butter over them; sprinkle with pepper. Serve in a warm vegetable-dish.

Instead of serving them in this manner, after combining the two vegetables, add half as much of No. 2 White Sauce as there is of vegetables. Re-heat and serve in bread boxes. A **bread box** is made by taking a piece of bread about three inches square and two inches high and hollowing it out to make a box. Then butter outside of box, place on pan, and toast in oven. Use while warm.

These bread boxes are used simply to vary the manner of serving a food. Creamed oysters, creamed meats, and other creamed vegetables are also served in bread boxes.

How may the bread which you removed from the center of the box be used?

CREAMED ONIONS

Peel an onion, wash and place in boiling salted water to cook. Do not cover pan. The onion is done when it can be pierced easily with a fork. Drain onion and add No. 2 White Sauce. Re-heat. Serve in a warmed dish.

BAKED STUFFED PEPPERS

Cut a thick slice from the stem-end of each pepper, remove all the seeds, wash thoroughly and let drain. Use enough stale bread crumbs to fill the peppers; add salt to taste, as much butter as desired and enough water to slightly moisten the crumbs. Heat this mixture until the butter is melted. Fill the peppers. Place them in a baking-dish in an upright position, and on top of each place a small square of bacon. Put water in baking-dish one half inch in depth. Bake slowly for forty-five minutes or until tender.

Have you ever seen green peppers used in any other way? Perhaps some one can bring to school a good recipe that may be copied and tried at home by other members of the class.

CABBAGE AU GRATIN

2 c. cooked and salted cabbage, cut in small pieces
1 c. No. 2 White Sauce
½ c. grated cheese
½ c. buttered bread crumbs

Butter the bottom and sides of a baking-dish. Place a layer of cabbage in the dish; cover with white sauce, then with cheese; put in another layer of cabbage, then white sauce. Cover top with buttered bread crumbs. Bake in a moderate oven (300°– 350° F.) for fifteen minutes or longer, until crumbs are nicely browned.

ESCALLOPED POTATOES

Potatoes may be prepared in the same manner as above, but are sometimes prepared by the following method:

Slice uncooked potatoes very thin. Into a buttered baking-dish put a layer of raw potatoes; sprinkle with salt and pepper and shake about a teaspoonful of flour over potatoes; add bits of butter if desired. Put in another layer of potatoes, seasoning, and flour. Add enough milk so that it comes up high enough in the dish to be seen around the potatoes. Over the top place buttered bread crumbs. Cover the dish for the first forty-five minutes. Bake very slowly (250°– 350° F.) for one hour or longer. More milk may be added if necessary. Test by carefully piercing with a fork to determine when potatoes are done.

THE POTATO

Potatoes are used as food in greater amount than any other vegetable. If all the potatoes grown, minus those used in other ways than human food, were equally divided among the people of the world, it would give every person about four bushels a year.

The potato is a native of America and probably was first found in Chile. It was first grown in Europe in or about 1585. In Ireland the potato is one of the chief foods of the people, and for that reason the white potato is called the Irish potato.

The botanist calls the potato a tuber, that is, an underground stem which has thickened and become a storehouse for food to be used by the new plants.

When the chemist examines the potato, he finds that it contains a large amount of starch, a little protein, some mineral matter and a large per cent of water. The potato is particularly valuable for its starch, and is therefore mainly a heat- and energy-producing food.

The method used in cooking potatoes has much to do with the food value. Baking or boiling "in their jackets" saves the food value. Peeling and then boiling causes some loss of the mineral matter and protein, since these foodstuffs are found just under the skin of the potato and may be lost when it is pared, unless very thin peelings are removed.

Potatoes, to be cooked, should be put in boiling water, not in cold, as soaking peeled potatoes in cold water draws out the starch and also causes a loss of protein and mineral matter. Potatoes should never soak in cold water after they are peeled, if all of the food value is to be saved. If they are old and withered, they should be freshened by soaking before the skin is removed. Potatoes should be removed from the boiling water as soon as they are done. Baked potatoes, when done, should have the skin broken or pierced with a fork to allow the escape of the steam, which would cause the potato to be soggy.

New potatoes are those sold immediately after they are harvested. Old potatoes are those that have been stored before being put on the market. In the spring old potatoes may sprout, which indicates that a new plant is beginning to grow from the "eye" of the potato. This hurts the quality of the potato for cooking. Potatoes that have been frozen are sweet, poor in flavor, and not mealy.

When buying potatoes, choose those of fairly uniform size, having smooth skins and free from scab. Potatoes

are sold by the measure or by weight, the latter custom being much more common than formerly.

Sweet potatoes are very much like Irish potatoes in food value, except that they contain sugar which gives them their sweet taste. Sweet potatoes are grown and used more in the South than in the Northern States.

LABORATORY EXERCISES

POTATOES

BAKED STUFFED POTATOES

Scrub with a brush, in cold water, a medium-sized, well shaped potato. Cut off a strip of peel one half inch wide around the middle of the potato. Place the potato on a rack in a hot oven. A medium-sized potato needs to bake about forty-five minutes. Test by piercing with a fork or pressing firmly between the fingers; it should feel soft if done.

Cut the potato into halves at the peeled strip, remove the inside carefully from the shells, mash, add salt, butter, and cream, or milk, using about one teaspoon butter and one tablespoon milk for each potato. Beat well. Refill the shell with the mashed potato; do not press down, but fill lightly. Place on pan and set in a hot oven to brown the top slightly. Grated cheese may be sprinkled over each potato before putting in oven to brown.

CANDIED SWEET POTATO

Scrub sweet potatoes and place in boiling water, cook until partly done, peel and place in a shallow baking-dish. Make a syrup by boiling together equal parts of sugar and water; pour this over the potatoes, sprinkle with salt and bits of butter. Bake in a hot oven until the potatoes are done and slightly brown.

RICED POTATOES

Wash and peel a potato. Cook in boiling salted water, allowing $\frac{1}{2}$ tsp. of salt to one pint of water. Boil gently.

When the potato can be pierced to the center easily with a fork, remove from the water. Press through the vegetable press or ricer into a hot dish. Serve.

MASHED POTATOES

To the riced potato add two teaspoons of hot milk; one half teaspoon of butter; salt to taste. Beat with a fork until the mixture is light and fluffy. Place in a hot dish and serve.

FRENCH FRIED POTATOES

Wash and peel small potatoes, cut in eighths lengthwise; soak thirty minutes in cold water to make very crisp. Take from water and dry between towels. Fry in a frying-basket in deep fat. Drain on brown paper and sprinkle with salt.

Test the fat with a small cube of bread. If bread browns in one minute, the fat is the right temperature for frying potatoes.

Should the fat be as hot as when frying the croquettes made in a previous lesson? Why?

REVIEW QUESTIONS

1. Why are vegetables important in the diet?
2. Into what two groups may vegetables be divided? Name examples of each.
3. How should highly flavored vegetables be cooked?
4. Why are vegetables cooked?
5. How should mild-flavored vegetables be cooked?
6. Give the points to be observed in selecting the following: head lettuce, leaf lettuce, celery, cabbage, tomatoes, green corn, and green peas.
7. What foodstuffs are found in a potato?
8. Should peeled potatoes be soaked? Why?
9. In cooking potatoes which are the best methods to use? Why?
10. How may baked potatoes be kept from becoming soggy?
11. What are "new potatoes"? "Old potatoes"?
12. How do sweet potatoes differ from Irish potatoes?
13. Is "French fried" an economical way of preparing potatoes? Why?

OTHER STARCHY FOODS

RICE

Rice is a food sometimes used in a meal in place of potatoes. Rice and potatoes should not be used in the same meal because both are starchy foods, of like appearance, and without much flavor. If a rice pudding is to be served as dessert, then green vegetables are best to use in the main course of the meal.

Most of the rice used in the United States comes from the Southern States, where the growing of rice is becoming a much more important industry than formerly.

Rice is sold in the market in two forms, (1) polished, and (2) unpolished or brown rice. In preparing rice for the market, the outer husk of the seed is removed. The rice then appears brownish in color and is called brown or unpolished rice. To remove this brown coating, the grains are polished. It is then sold as "polished rice" and is white in color. The brownish coating on the rice contains mineral matter and vitamins. When it is removed valuable food material is lost. The brown rice has a good flavor but does not sell so well as the polished rice because of its appearance. It is cheaper than the polished rice. When buying the "best" rice, one should see that the grains are uniform in size and unbroken. Rice may be bought by the box or by the pound. When sold by the box it is more expensive, but may be more sanitary. Since rice is washed thoroughly before cooking, there is little reason for purchasing in the package. It takes about one third of a cup of rice to make a cup of cooked rice.

MACARONI, SPAGHETTI, VERMICELLI

Macaroni is a product made by mixing flour with water to form a stiff dough which is then forced through

metallic plates that have small round perforations with the center of the hole filled, thus making long hollow tubes of dough. When the dough tubes have been dried in ovens they are packed for market. Macaroni is sold in packages that contain pieces cut the length of the package, packed closely side by side, or pieces cut about two or three inches long.

Spaghetti is another form in which this paste is sold, but for this the tubes are made smaller than for macaroni. Vermicelli is still another form of this paste, sometimes rolled and cut in fancy shapes, such as the alphabet.

Macaroni and spaghetti are served as a substitute for starchy vegetables, and when either is used, such foods as potatoes, rice, corn, or beans should be omitted from the meal. Vermicelli is used in soups.

Any of these products need highly seasoned foods, such as tomatoes or cheese, either cooked or served with them. To taste best, they require fat added.

HOMINY

Hominy is a product made from corn by removing the hard outside layers of the kernel. It may be sold in this form, or the grains may be broken into small pieces, when it is called grits — or the pieces may be steamed and rolled, when it is known as flaked hominy. Hominy is a starchy food often used in a meal in place of potatoes, and is very good when well cooked.

CORNSTARCH

Cornstarch is also a product made from corn, and is used as a thickening agent. It is a fine white powder and is sold in packages. Cornstarch is also used in starching clothing, and the cornstarch employed for

that purpose is made in the same way as that used in cooking, but the latter is purer.

TAPIOCA

Tapioca is a product made from the root of the cassava plant which grows in South America. It is almost pure starch, and is prepared from the root by grating, washing, and separating the starch, after which it is dried on metal plates. Tapioca is sold in two forms, (1) pearl tapioca, which is usually soaked several hours before cooking, and (2) granulated or minute tapioca, which need not be soaked. Tapioca is used mainly in making puddings.

LABORATORY EXERCISES

STARCHY FOODS

Experiments: 1. Starch turns to a blue color whenever tincture of iodine is added to it. Place a drop of iodine on each of the following: a slice of potato, rice, tapioca, cream of wheat, flour, sugar, egg, meat. Which contain starch?

2. Place one half teaspoon of cornstarch in two tablespoons of cold water in a glass or test tube. Mix together well. Has the liquid changed in appearance? Let this stand for fifteen minutes. What has happened? Is the starch dissolved in the cold water?

3. Try the same experiment, using sugar instead of starch. Is the result the same? Why?

4. Pour one half cup boiling water directly on one tablespoon cornstarch, stir, boil one minute. Is the mixture smooth? Examine the inside of a lump. Is it like the uncooked starch?

5. Mix one half teaspoon cornstarch with two tablespoons cold water. Heat slowly, boil one minute. Is the mixture smooth? Can you explain why?

6. Try the same experiment, mixing the cornstarch with an equal amount of sugar; then add boiling water. What is the result?

7. Try mixing one tablespoon cornstarch with one half teaspoon fat and stirring into boiling water. What is the result?

The results would have been the same if you had used flour instead of cornstarch. The starch grains must be thoroughly separated before cooking, so that each starch grain may cook thoroughly. From these experiments determine the best method for making blanc mange.

BLANC MANGE

2 c. milk	2 tsp. vanilla
$\frac{1}{4}$ c. cornstarch	$\frac{1}{8}$ tsp. salt
$\frac{1}{4}$ c. sugar	Nutmeg

The pudding should be cooked thirty minutes in a double-boiler. Pour into a mold that has been wet with cold water. When cold and "set", remove from mold and serve with fruit juice, or maple syrup, or cream.

MACARONI AND CHEESE

Break macaroni into short pieces. Rinse and add to boiling salted water. Use about one fourth cup of macaroni with one pint of boiling water and one half teaspoon salt. Boil gently until macaroni is tender. Drain off water, pour cold water over macaroni and drain at once; this prevents the pieces sticking together.

In the bottom of a buttered baking-dish place a layer of well seasoned No. 2 White Sauce made with milk, then a layer of macaroni, then a layer of grated cheese, then one of white sauce, — continuing until the dish is almost filled. Place a layer of buttered bread crumbs on top. Bake slowly thirty to forty minutes.

RICE AS A VEGETABLE

3 c. water	1 c. rice	1 tsp. salt

Place rice in wire strainer and wash by running water through the rice. Place water in top part of a double-boiler over direct heat and bring to boiling-point; add the rice and salt. Place over boiling water and cook until the rice is tender. Serve.

One Cup of Rice Will Absorb One Quart of Milk When Cooked in the Double-boiler — a Good Method of Preparing Rice for Children and Invalids

Rice may be cooked in a steamer if desired. It is also cooked in boiling water over direct heat, using eight cups of water to one cup of rice. Why is more water needed? Which method would be best to use when all the food value is to be retained?

REVIEW QUESTIONS

1. What do you know about the growing of rice?
2. In what forms is rice sold? Which has the most food value? Which is better in appearance?
3. What is the price of polished rice per pound? Of unpolished rice?
4. How is macaroni made? What nation eats a great deal of macaroni?
5. What is spaghetti? Vermicelli?
6. How is hominy made?
7. What are hominy grits? Hominy flakes?
8. What food may hominy replace in a meal?
9. In what kind of package is cornstarch usually sold? What is the price?
10. What is tapioca?
11. In what two forms may tapioca be purchased?
12. Which is the easier to use?

MEAT

The flesh of animals is called meat. The principal kinds used in the United States are beef, veal, mutton, lamb, and pork.

The slaughtering and packing of meat is one of the most important industries in the United States and is one that is governed by many Federal and State laws. These are necessary, because meat used as food must be clean and free from harmful bacteria, as well as from parasites, which are tiny living creatures in the flesh of unhealthy animals.

Clean meat is that from animals free from disease, slaughtered under sanitary conditions, and kept in a cold place away from flies, dust, and other dirt until sold to the housekeeper. The large packing firms have their plants well equipped to carry on this work according to law. Some of the small slaughter-houses used by butchers are not clean and are not good places for handling meat.

The meat market or shop must be kept clean, and the men handling the meat must wear clean clothes and have clean hands if the meat is to be kept in good condition. As soon as fresh meat comes from the market the paper wrapping should be removed and the meat put in a cool place, away from flies and dust.

In order to understand thoroughly what cooking does to meat, one must understand its structure. Meat is composed of muscle fibers held together by connective tissue. Each fiber is composed of bundles of tiny tubes filled with muscle juice composed of water in which are protein, mineral matter, coloring matter, and extractives. The extractives give the flavor to meat. In between the muscles, and surrounding the tubes, are the particles or globules of fat.

Courtesy of E. C. Bridgman

American Meat-cutting Chart — Beef

When meat is cooked the connective tissue is softened, the flavor is improved, and changes take place in the muscle juice. Meat is either tender or tough, depending upon the age of the animal and the part of the carcass from which it comes. The tough portions come from the much exercised sections of the animal's body. The tough cuts usually have more flavor, contain as much food value, and when well cooked are as pleasant to the taste as the tender cuts. The tough cuts cost less than the tender because there are fewer tender cuts in the animal carcass.

Tender cuts of meat can be cooked successfully in dry heat by (1) broiling, (2) pan-broiling, and (3) roasting. The tough cuts are best when cooked in moist heat by (1) stewing, (2) braising, and (3) pot-roasting.

When selecting meat at the market it is important to know the names of the several cuts and also the part of the animal carcass from which the cuts are taken, in order to decide which method is best to use in cooking them.

LABORATORY EXERCISES

MEATS — TENDER CUTS

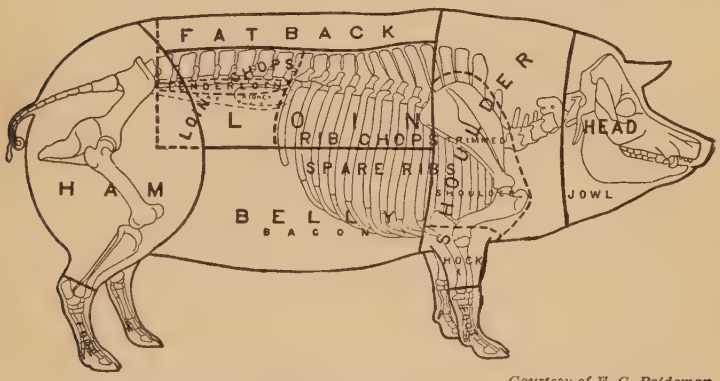
Experiments: 1. Take a small piece of tough lean meat and scrape with the dull edge of the knife, scraping both sides until nothing remains but the stringy mass or framework of the meat. Of what is this framework made?

2. Place the stringy mass in a frying-pan and heat for a few minutes. What is the result?

3. Pour a little water in the frying-pan, cover pan, and simmer slowly for twenty minutes. What effect has the moist heat had on the stringy mass?

What would be the best methods to use in cooking tough meats? Why?

4. Place one cube of meat in a small amount of cold water and let boil three minutes. Place another cube of meat in a small amount of boiling water and boil three



Courtesy of E. C. Bridgman

American Meat-cutting Chart — Pork

minutes. Examine the liquid on both. Do they differ? Why? Which method would you use for making soup? Which when the meat itself is to be used? Why?

PAN-BROILED STEAK

Wipe steak with damp cloth. Have frying-pan very hot. Rub a little fat over the bottom of the frying-pan. Place the steak in the frying-pan, sear on one side, then on the other; turn very often and cook until done according to taste. Place on warmed platter, sprinkle with salt and pepper, and with bits of butter if desired.

A steak for broiling should be at least one inch thick. To cook a steak of this thickness to a medium degree requires about fifteen minutes.

Lamb chops, mutton chops, or pork chops may be broiled in the same way.

A broiler may be used instead of the frying-pan if there is one available.

ROAST OF BEEF

Wipe the roast with a damp cloth. Place in a roasting-pan in a very hot oven. Roast ten minutes, or until the meat is seared. Dredge the roast with salt, pepper, and a little flour. Reduce heat in the oven and continue roasting until done according to taste; about fifteen or twenty minutes must be allowed for each pound to cook to a medium degree. A little water may be added which may be used for basting the meat. A large roast is always more juicy than a small one — four or five pounds is as small a roast as should be used to obtain good results.

Meat may be roasted in the fireless cooker, if desired.

CASSEROLE OF BEEF

2 c. left-over cooked beef
1 c. gravy
$\frac{1}{4}$ c. celery cut in small pieces
$\frac{1}{4}$ carrot cut in small cubes
1 c. potato cubes
$\frac{1}{2}$ c. canned tomatoes
$\frac{1}{2}$ onion, thinly sliced
$\frac{1}{4}$ tsp. salt
$\frac{1}{16}$ tsp. pepper

Mix together and place in a casserole; cover. Bake slowly one hour. Serve from casserole.

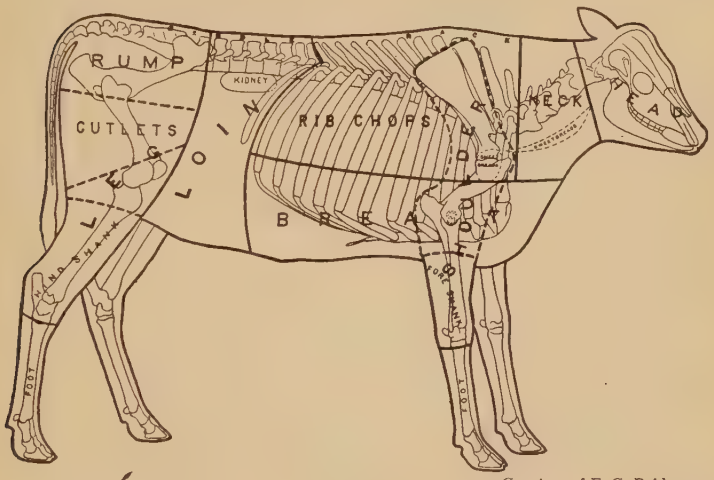
REVIEW QUESTIONS

1. What are the principal kinds of meat used in the United States?
2. Why must meat be kept clean?
3. What is clean meat?
4. Describe the structure of meat.
5. What are the foodstuffs found in meat?
6. What is the chief value of meat as food?
7. What changes take place in meat when it is cooked?
8. What makes meat tough?
9. From what parts of the animal are the tough cuts obtained?
10. How may tender cuts be cooked? How should tough cuts be cooked?
11. Make a plan for dinner in which casserole of beef might be correctly served; roast beef; broiled steak.
12. What other meats might be used in place of the beef in the casserole of beef?

MEAT (*Continued*)

BEEF

Meat from cattle is called beef. After beef is butchered, the carcass is first split lengthwise into two "sides" of beef, then each side is divided crosswise



Courtesy of E. C. Bridgman

AMERICAN MEAT-CUTTING CHART — VEAL

into the "fore quarter" and the "hind quarter." The quarters are divided into the "cuts" or pieces as we buy them in the meat-shop. Different butchers make these cuts in slightly different ways, but in general they are the same.

By looking at the chart showing the cuts of beef one can learn to what section the various cuts belong.

The following are the usual methods of cooking the most common cuts:

Roasting: rib, loin, round, chuck.

Pot-roasting: chuck, rump.

Broiling: porterhouse, Delmonico or club steak, sirloin, T-bone steak.

Soup-making: neck, brisket, leg.

Braising: flank, chuck.

The fireless cooker is very useful in cooking tough meats, because they need long slow cooking if they are to be tender and juicy. Heat coagulates or "sets" the protein in the muscle tubes, and when the meat is cooked at a high temperature the protein becomes tough, just as the egg-white does when an egg is boiled.

When meat is cooked, the object sought is to coagulate quickly the muscle juice in the ends of the tubes so that they are closed and no juice can escape; this process is called "searing." Meat is seared, either by plunging it into boiling water, by placing it in a very hot oven, over hot coals, or in a very hot frying-pan. After the meat is seared, the temperature should be lowered and the meat cooked slowly. When broiling meat, keep the fire very hot and turn the meat every two or three minutes, in order to keep the meat at the proper heat.

Veal is meat from a calf about two months old.

Mutton is meat from a sheep about two years old.

Lamb is meat from a sheep less than one year old.

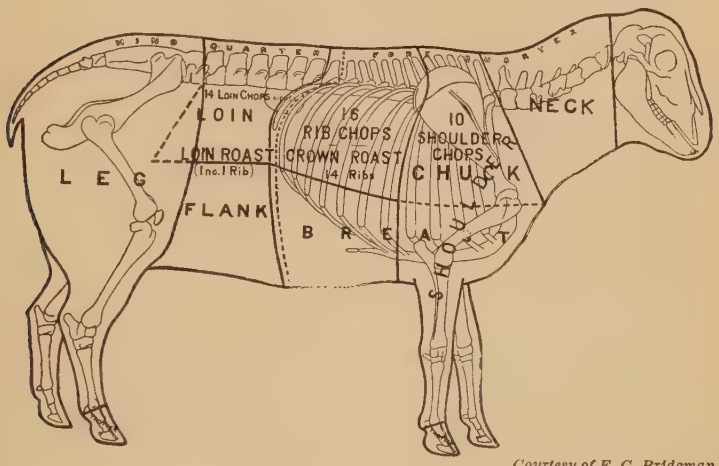
Spring Lamb is from a sheep eight weeks to three months old.

Pork is meat from the hog, and is used in great quantities. The cuts are shown on the chart. Bacon and ham are very generally used because they are both "cured" and can be shipped and easily kept.

Leaf lard is made from leaf fat (layers of pork fat), and is the best quality of lard.

Sausage is made of ground pork scraps, or trimmings; it is sold in bulk, or is stuffed in casings which are made of the treated skin of the intestines of the hog.

Meat contains such a large amount of protein that it is considered an important food for body-building. We do not need to eat as much meat as we usually do,



Courtesy of E. C. Bridgman

American Meat-cutting Chart — Lamb

because other foods can supply the necessary protein. There is probably no person who needs meat three times a day. When meats are expensive, well-balanced meals may be planned without the use of much meat.

HOME PROBLEMS AND QUESTIONS

What is the price per pound of the following: round steak, rump-beef roast, chuck-beef roast, porterhouse steak, a whole ham, slice of ham, side of bacon, sliced bacon, mutton chops, veal steak, rib-pork roast?

Is there a slaughter-house in the neighborhood?

Where are the large packing plants from which the local butcher buys meat? What firms manage the largest packing plants in the world?

See if you can find the government inspection stamp on any of the meat which is used in your home. What does this indicate? Ask the butcher.

LABORATORY EXERCISES

MEATS — TOUGH CUTS

SWISS STEAK

Place on a meat-board a piece of steak one inch thick, cut from the round. Wipe the meat with a damp cloth, and pound flour into it, using the dull edge of a heavy saucer or small plate to pound with. Pound on both sides thoroughly. The pounding breaks apart the muscle of the meat, and helps to make it tender.

Have a frying-pan hot; in this place some fat and when it is melted place the meat in the pan. Brown the meat on both sides, and sprinkle it with salt and pepper. Add boiling water to half cover the meat. Tomato juice may be used instead, if desired. Chop onion, green peppers, and carrots, and place over and around the meat. Cover and place in slow oven or fireless cooker. Cook until the meat is tender.

POT ROAST

Use a piece of rump for this. Wipe the meat with a damp cloth, and brown it in hot fat in the frying-pan. Place in a kettle, add boiling water until the meat is half covered. Diced carrots, turnips, onions, or celery may be added if desired. Place in a fireless cooker, or simmer gently on the stove until the meat is tender. For gravy, the water in which the meat is cooked may be thickened or served as it is.

BEEF STEW

1 lb. beef (tough cut)	1 carrot
2 potatoes	½ onion
Flour	Salt and pepper

Cut beef in one-inch pieces, dredge with flour. Brown the onion, and then the meat, in hot fat in a frying-pan.

If there is fat that can be removed from the meat, this may be used in the frying-pan. Add enough boiling water to nearly cover the meat. Simmer until the meat is almost done, then add the diced vegetables and cook until the vegetables are done. The liquid may be thickened before serving, if desired. If the stew is placed in the fireless cooker the vegetables may be added at first, since it is not desirable to open the cooker before the meat is done.

REVIEW QUESTIONS

1. What is a "side of beef"? A "quarter of beef"? A "cut of beef"?
2. Name some cuts of meat coming from the fore quarter of beef; from the hind quarter.
3. What cuts of beef should be used for broiling? For pot-roasting? For roasting? For braising?
4. What is meant by "searing"? How is meat seared?
5. What is meant when the recipe says "dredge" the meat with flour?
6. What is veal? Mutton? Lamb? Pork?
7. What is "leaf lard"?
8. How is sausage made?
9. Do we need to eat meat three times a day?
10. What foods can sometimes be substituted for meat in the diet?

LABORATORY EXERCISES

SERVE A DINNER

Suggested Menu: Broiled pork chops
Baked stuffed potatoes
Creamed onions
Baking-powder biscuit
Banana salad

Estimate the cost of the meal.
Discuss order of work.
What dishes will be used?
Would this menu be suitable for a child two years old? How could it be changed for the child?

Plan, prepare, and serve one dinner at home and write a report of the work. In what ways could the time required for doing the work be shortened?

SOUPS

When meat, bone, and gristle are boiled in water, the liquid that remains after the boiling is called "stock." This is used in making soup.

When stock stands, it sometimes forms a jelly-like mass that is called "gelatine." This gelatine is formed from the connective tissue which is present in the meat, bones, and gristle, and which is soluble in hot water.

Commercial gelatine is usually sold in small packages. It is made from the skin, ligaments, and bones of animals, and is largely used in making desserts and salads. Gelatine is a form of protein, and has some food value.

When meat is prepared for making soups, it is cut into small pieces and put into cold water to allow the juice to soak out of the muscle tubes as much as it will. The extractives are also drawn out of the meat by the water.

Meat stock alone contains very little food value, but by adding milk, vegetables, or bits of meat, we make it much more valuable as a food. Soups made from plain meat stock have a value, however, because the extractives cause the digestive juices to become more active, and it is for this purpose that clear soups are served at the beginning of a meal.

LABORATORY EXERCISES

SOUPS AND GELATINE

SOUP STOCK

Soup stock may be made from fresh meat, bone, and gristle, or it may be made from trimmings and left-over meats. There may be several kinds of meat cooked together to make

the stock. Some housekeepers keep a "soup-kettle" in which scraps of meat, bone, and trimmings are placed. When there is enough in the kettle, water is added and the stock made. Meat scraps must not be kept too long, however.

Bouillon is the cleared stock made from beef. *Consommé* is the cleared stock made from two or three kinds of meat.

Soup stock is used, in combination with other liquids, in soups and gravies, or with vegetables in vegetable soup. If fresh meats are used in making stock, the meat itself should be used in some other way, because it contains about as much protein as fresh meat. It is tasteless, and must be well seasoned or used with highly flavored vegetables. This meat may be used in croquettes, hash, meat pies, and in casserole of vegetables and meat.

BEEF STOCK

2 lb. beef 1 tsp. salt 2 qt. cold water

Cut the meat into small pieces; crack the bone (let the butcher do this when you buy fresh meat); pour the water over this and let stand one hour. Simmer for three hours. Strain and let cool. For bouillon remove the fat from the top of the stock and strain the stock through cheesecloth; season with a bay leaf or cloves, pepper, and salt, and re-heat. Sometimes egg-white is used for clearing bouillon, using white and shell. How could this be done?

VEGETABLE SOUP

2 qt. stock
1 onion, sliced
1 stalk of celery or dried celery leaves
1 carrot, diced
1 turnip, diced
Salt and pepper

Any left-over vegetables may be used. Barley, macaroni, or rice is sometimes added. Add the vegetables to the stock. Simmer gently until vegetables are heated through or cooked.

Experiments: 1. Examine various kinds of gelatine that can be purchased in the store. How do they differ? What is the price per ounce?

2. Place one fourth teaspoon of gelatine in one tablespoon cold water; let stand five minutes. What has happened? Add two tablespoons boiling water. Does the gelatine dissolve?

3. Add two tablespoons of boiling water to one fourth teaspoon gelatine. What happens? What method should be used in making gelatine dishes?

PERFECTION SALAD

½ c. sugar	2 tbsp. granulated gelatine
½ c. cold water	1 tsp. salt
½ c. vinegar	2 c. sliced celery
2 c. boiling water	1 c. shredded cabbage
Juice of one lemon	3 pimientos, chopped

Soak the gelatine in the cold water for a few minutes. Add the boiling water and sugar. Stir until all the gelatine and sugar are dissolved. Add lemon juice, vinegar, and salt. Let cool until mixture begins to "set", then stir in vegetables. Wet the inside of individual molds with cold water. Pour in gelatine mixture. Keep in cold place until "set." Remove from mold, serve on lettuce with mayonnaise dressing.

LEMON JELLY

1 tbsp. granulated gelatine	¾ c. sugar
¼ c. cold water	1½ c. boiling water
¼ c. lemon juice	⅛ tsp. salt

Follow directions for mixing given under Perfection Salad. Pour mixture at once into large mold. When it is cold and "set", remove from mold and garnish with whipped cream.

REVIEW QUESTIONS

1. What is "stock"?
2. Give directions for making "stock."
3. In what ways is meat stock used?
4. How is bouillon prepared?
5. Of what value in the diet are clear soups?
6. Why should the meat left from stock be used?
7. In what ways may this meat be used?

8. From what is commercial gelatine made?
9. Why should the vegetables not be added to the gelatine mixture until it begins to "set"?
10. Make a plan for a meal in which it would be proper to serve vegetable soup.
11. Make a dinner plan, using lemon jelly as the dessert.
12. Make a plan for a meal in which it would be correct to serve perfection salad.

POULTRY, GAME AND FISH

Poultry is the name given to domestic birds suitable for food, such as chicken, turkey, goose, and duck. Game is the name given to wild birds and animals that are hunted for food, such as quail, partridges, wild ducks, and geese. Pigeons and squabs are classed as game. In the United States game has become very scarce and is little used for food.

Chicken is used more than any other kind of poultry, and can be purchased in the market at any season of the year. A "spring chicken" is a chicken not more than four months old. A "broiler" is a young chicken that weighs about a pound, or a pound and a half. In selecting chickens in the market, it is necessary to know how to tell the age. A young chicken will have smooth yellow legs, and the end of the breast bone will be soft and flexible, while an older bird has scaly legs and a firm breast bone. In a dressed bird, a large number of small pinfeathers indicates that it is young, while long hairs in place of pinfeathers show age in the bird.

The breast or "white meat" of chicken is especially tender because it is composed of short fibers with a small amount of connective tissue and very little fat. Because of the structure of the meat and its low percentage of fat, white meat is easily digested, and is therefore often used in invalid cookery.

Poultry and game are much like meat in food value, and when either is served it takes the place of meat in the meal.

FISH

The flesh of fish is not unlike the flesh of meat, and can be used as a meat substitute.

Fish and other sea foods contain iodine which seems to be needed by the body to keep it in the best condition.

In some sections of this country fish can be obtained fresh, and is best when cooked soon after being caught. Fresh fish is more difficult to keep in good condition than meat, and is therefore not easily shipped. When fresh fish can be purchased, it should be used often to vary the diet. Many kinds of fish are canned, dried, salted, or smoked, and in these forms are found in every local market; but fresh fish is not easily obtained inland — in many cases because there is no demand for it.

Oysters are one form of shellfish used as food. The oyster is protected by a hard shell covering. This shell is usually removed before the oyster is sold in the market. The name "Blue Point", and other special names, formerly indicated the locality where the oysters were grown, but this is no longer the case.

Oysters stand shipping well, and are sold in most localities during the winter months at least. While oysters have little food value, they are much liked for their flavor. Oysters are eaten raw or cooked. They should be cooked at a low temperature to prevent toughening them.

Clams, lobsters, shrimps, crabs, mussels, scallops, and oysters are called shellfish and differ from other fish in being covered with a shell.

LABORATORY EXERCISES

POULTRY AND FISH

To dress a chicken: 1. Remove feathers by pulling them out, after plunging the fowl into boiling water and holding it there for a moment or two. Fowls are sometimes picked without scalding, if the work can be done immediately after they are killed.

2. Singe the plucked fowl by holding it in a flame of gas or burning paper, being sure that all parts are exposed during the process so that all hairs are removed.

3. Cut off the head, if it has not been removed. The neck may be removed by pushing back the skin and cutting it off.

4. Remove the feet by cutting and breaking the legs at the joints.

5. Make an incision one inch above the vent and crosswise between the legs. Draw out the intestines and other organs carefully, cutting away the vent. Remove from the mass the heart, liver, and gizzard, being careful not to break the gall bladder which lies under the liver. Cut the gall bladder away carefully.

6. Remove the skin from around the gizzard; open the gizzard and remove the inner skin and contents.

7. Wash the liver, gizzard, and heart, squeezing the latter to remove any blood. These organs are known as the "giblets."

8. The crop and windpipe may be removed at the neck. Do this without breaking the crop, or tearing the skin at the neck.

9. Remove all pinfeathers with a sharp-pointed, small knife. Remove the oil bag from the tail.

10. Wash the chicken well in cold water, both inside and out. Dry with a cloth. The fowl is now ready to be used for baking.

11. When a fowl is to be cut into pieces, as for stewing, it is usually convenient to remove the wings and legs before removing the intestines and other organs from the body.

Poultry should always be allowed to stand several hours after dressing before it is cooked.

STEWED CHICKEN

Place the pieces of chicken in a kettle and cover with boiling water; boil a few minutes; then add one tablespoon salt, and simmer until the meat is tender when pierced with a fork. Remove the chicken to a warm platter and set in a warm place. Add milk to the liquid in which the chicken was cooked. Thicken with flour, and cook for five minutes; pour over chicken and serve.

Dumplings may be served with the stewed chicken if desired. These are cooked by placing them on top of the pieces of chicken in the kettle, keeping the dough out of the water as far as possible. Cover the kettle tightly. Cook twenty minutes. Remove dumplings and chicken; thicken gravy and serve. Dumplings of this kind are made like baking-powder biscuits, except that the dough is not so stiff.

SCALLOPED OYSTERS

1 pt. oysters
3 c. bread crumbs *or*
$2\frac{1}{2}$ c. cracker crumbs
$\frac{1}{2}$ tsp. salt
4 tbsp. butter
Milk
$\frac{1}{4}$ tsp. pepper

Look over the oysters carefully, removing any bits of shell or other refuse. Drain the liquor from the oysters by straining it through a wire sieve. Wash the oysters by dipping the sieve into water, or by allowing water from the faucet to run through them. Melt the butter in a frying-pan; add the crumbs, salt, and pepper. Place a layer of crumbs in a buttered baking-dish, then a layer of oysters, then a layer of crumbs, until the dish is filled, finishing with a layer of crumbs on top. Add enough milk to show on the top at the side of the dish. Bake in a moderate oven (350°–400° F.) forty to fifty minutes.

FRIED OR SAUTÉED FISH

Clean the fish carefully, being sure that all the scales are removed. Split the fish on the under side, lengthwise, and

clean the inside carefully. A large fish can then be cut into pieces of the desired length; a small fish need not be cut. Roll each piece in equal parts of corn meal and flour, or in egg and bread crumbs as for croquettes. Fry in deep fat or sauté in the frying-pan until tender. Tomato sauce may be served with the fish if desired.

REVIEW QUESTIONS

1. What is included under the name poultry?
2. What is included under game?
3. What is a "spring chicken"? A "broiler"?
4. How may the age of a fowl be determined?
5. What is the white meat of a chicken?
6. Is it tender or tough? Explain the structure.
7. What foods should not be used in a meal when chicken is served?
8. In what forms may fish be found in every market?
9. What kinds of fish, fit for food, are caught in the rivers and lakes in this locality?
10. In what ways have you seen fresh fish served, other than fried or sautéed?
11. What is the price of oysters per quart? Per pint?
12. How are oysters kept at the store?
13. Is it economical to serve scalloped oysters and meat in the same meal? Why?

DESSERTS

Desserts may be divided into four large groups: (1) fruits, either fresh, dried, or cooked; (2) puddings; (3) pastry; (4) frozen desserts. As a fifth, cakes may be added.

Elaborate desserts, which require a great length of time spent in preparation, should not be used often in most households, because simple desserts taste just as well and the housekeeper may use her time for more useful work, or for recreation.

In choosing a dessert to use at the end of a meal, one must consider what foods have already been served in the other courses. If every one has had all the food

needed and feels satisfied before dessert is served, it is then a wise plan to omit dessert. When a dessert is served after a heavy meal it should consist of fruit or a gelatine pudding, rather than of pie or a rich pudding. No one should eat pie three times a day, nor every day.

A pie should have a light, flaky, tender crust that is thoroughly baked. Pie crust must be chewed thoroughly, since even the best is hard to digest. It is easier to make tender pie crust from pastry flour, because that contains less gluten and more starch than bread flour. Bread flour may be used, however. Many kinds of fat are used in pie crust, such as lard, butter, vegetable fats, and oils. Fat makes the crust "short" and flaky, and is often called "shortening." The crust is made tender by careful handling, and by folding and rolling several times so that air is folded into the dough. This air, and the steam formed from the water used in the mixture, expand the dough during baking and make the pie crust light.

Desserts containing eggs and milk should be served only at the end of a meal when little protein has been eaten in the other courses.

Frozen desserts may be made, mainly of cream, milk, eggs, and sugar, such as plain ice cream, French ice cream, or mousse; or they may be made of water, fruit juice, and sugar, such as sherbet, water ice, or frappé.

There are two kinds of freezers used for making frozen desserts: (1) the freezer with a crank to be turned during the first stages of the freezing; (2) the freezer without any crank, called the vacuum freezer. This freezer is constructed with a double outside wall forming an air space between; in the center is the can for holding the mixture to be frozen, and between this and the outside wall is the space for holding the salt and

ice. In the bottom of the freezer is an opening through which the ice is packed around the center compartment.

Desserts are frozen by the use of ice mixed with coarse or "rock" salt in the proportion, ordinarily, of

TWO TYPES OF ICE-CREAM FREEZERS
THE ONE AT THE RIGHT IS A VACUUM FREEZER

one part of salt to three parts of cracked ice. When ice melts, heat is absorbed from the surrounding materials. When salt is added, the ice melts at a lower temperature and a greater amount of heat is absorbed. The freezing of the mixture, in a can surrounded by ice, is brought about because the ice and salt absorb the heat from the contents of the can.

HOME PROBLEMS AND QUESTIONS

Plan a dinner, consisting of meat, vegetables, and salad, that is suitable for the season.

Plan one, consisting of meat, vegetables, salad, and dessert, suitable for the season.

Plan a "one-dish" meal.

Would other foods need to be added for the small child? If so, what would you add?

Plan a dinner in which custard pie might be served.

The following dinner will be served during the next laboratory period:

Bouillon, wafers
Swiss steak with gravy
Candied sweet potatoes
Salad: green beans, chopped onion and parsley, with French dressing
Lemon gelatine with whipped cream
Date cakes

Make a plan for preparing the dinner. What proportions of each recipe should be made for the number to be served?

Make a list of the food, with the amount that will be needed for the meal. Give the order in which the food is to be prepared. What dishes will be needed for serving the meal in the English style? Bring the plan to class for discussion.

Find in the dictionary or encyclopedia what you can about spices, such as nutmeg, cloves, cinnamon, mustard, and ginger; also about pepper and salt. How is vinegar made? From what is extract of vanilla made?

LABORATORY EXERCISES

DESSERTS

PLAIN PASTRY

1 c. flour	½ tsp. salt
⅓ c. lard	Ice water

Sift the flour before measuring it. Add salt to flour, and sift again. Cut in shortening with two knives. Add just enough water to make a dough that can be rolled. Chill, roll out, fold, roll again, repeating two or three times.

When a crust is to be baked without a filling, the dough may be placed on the outside of the pie-pan turned upside down. Prick the crust well with a fork to keep it from blistering. A pie crust should be baked in a hot oven (450°–550° F.). Care must be taken, however, not to burn the edges.

Let members of the class suggest fillings for a one-crust pie. Perhaps some can bring a good recipe that may be used in class.

Fruit pies are more easily digested if they are made with only a top crust. The fruit is placed in a deep pie-pan of earthenware, enamel ware, or glass. The crust is then placed over the top, pressed down well on the edge, and baked, at 400°–450° F. When two crusts are used, the lower crust must be baked thoroughly and the pie should be removed from the pan as soon as it is taken from the oven. The steam which collects on the pan has a tendency to make the lower crust soggy.

This is a good pudding to use for Thanksgiving or Christmas:

STEAMED PUDDING

2 c. bread crumbs	½ c. suet
½ tsp. soda	½ c. molasses
⅛ tsp. cloves	1 egg
⅛ tsp. cinnamon	¾ c. milk
¼ tsp. salt	½ c. currants
½ c. raisins	

Mix a little flour with the suet, then chop it in a chopping-bowl with a chopping-knife, or put it through the meat-grinder. Beat the egg and add the milk. Wash the raisins and currants in a wire strainer by running cold water through them; dry on a towel; cut the raisins in halves. Mix the raisins and currants with a little flour, as this makes them mix with the dough more easily. Add crumbs, spices, soda, currants, raisins, and suet to the milk-and-egg mixture. Then add the molasses. Pour into a well greased pudding mold. Steam two hours. Remove lid of pudding mold, place pud-

ding in oven and bake for a few minutes. Serve with any kind of sauce desired.

HARD SAUCE

$\frac{1}{3}$ c. butter 1 tsp. vanilla
1 c. powdered sugar

Cream the butter and add sugar gradually, beating until the sauce is light and creamy; add flavoring. Set in a cool place until served.

PUDDING SAUCE

$\frac{1}{2}$ c. sugar 3 tbsp. butter
$\frac{3}{4}$ c. water $\frac{1}{4}$ tsp. vanilla
A little cinnamon or nutmeg may be added

Boil together until the sauce is of the desired thickness. This may be varied by pouring the hot liquid slowly over a well beaten egg. Beat mixture thoroughly. Why should the mixture be poured over the egg slowly?

If there is an ice-cream manufacturing plant in the neighborhood, visit it to see how ice cream is made commercially. How is brick ice cream made? Have you seen ice cream frozen in other shapes?

Serve the dinner already planned, inviting guests if possible.

Plan other company dinners.

Plan a menu for a Thanksgiving dinner.

Plan a menu for a Christmas dinner.

Discuss the cost of all meals served.

REVIEW QUESTIONS

1. Into what groups may desserts be divided?
2. Should elaborate desserts be served often in most homes? Why?
3. When should pie be eaten?
4. What is "shortening"?
5. State the characteristics of a good pie crust.
6. What makes the crust "light"?
7. What kind of desserts may be served at the end of a heavy meal?

8. What materials are used for freezing desserts? In what proportions?
9. Explain the freezing of ice cream.
10. How is a smooth texture obtained in a frozen mixture?

THE DAILY MEALS OF THE FAMILY GROUP

The three meals that are eaten daily by the family group have been studied separately, but before leaving the subject it is necessary to consider the making of the plans for the day and for the week. One meal may be planned correctly, but the diet is not well balanced unless the three meals for each and every day furnish the proper amount of foodstuffs for body-building and regulating and for warmth and energy, with the protective foods furnishing the vitamins and minerals.

How, then, shall one know when enough of the right kind of food is eaten? Persons who have studied the science of nutrition have set standards to follow that are a great help to the housekeeper.

Heat and energy furnished by a given amount of food are measured by the scientist, and the unit of measure that he uses is called a calorie. A calorie is the amount of heat required to raise the temperature of one pound of water four degrees Fahrenheit, or a kilogram of water one degree Centigrade.

By placing food in a food calorimeter, a machine designed for the purpose, it is possible to measure how much heat will be produced from a certain amount of food when it is burned, or oxidized. In a machine called a respiration calorimeter, it is possible to measure the amount of warmth and energy used by a person in doing work, or in merely keeping the body warm and active. Even when quiet, a certain amount of energy is being used by the body, as for example in breathing.

Since, then, the scientist is able to measure in calories the amount of heat required by the body, and is also able to measure how many calories are furnished by portions of different foods, it becomes possible for him to set a standard for the daily requirements of food. This requirement varies with the age, the size, the weight, and the work being done by the person eating the food.

The following is one standard of food requirements for healthy children:

FOOD ALLOWANCES FOR HEALTHY CHILDREN[1]

AGE, YEARS	CALORIES PER DAY		AGE, YEARS	CALORIES PER DAY	
	Boys	Girls		Boys	Girls
Under 2	900–1200	900–1200	9–10	1700–2000	1550–1850
2–3	1000–1300	980–1280	10–11	1900–2200	1650–1950
3–4	1100–1400	1060–1360	11–12	2100–2400	1750–2050
4–5	1200–1500	1140–1440	12–13	2300–2700	1850–2150
5–6	1300–1600	1220–1520	13–14	2500–2900	1950–2250
6–7	1400–1700	1300–1600	14–15	2600–3100	2050–2350
7–8	1500–1800	1380–1680	15–16	2700–3300	2150–2450
8–9	1600–1900	1460–1760	16–17	2700–3400	2250–2550

A list of the number of calories furnished by a pound of the different foods has been made and published in a bulletin entitled "The Chemical Composition of American Food Materials", used in the section on "Vegetables." It is difficult, however, to learn from this bulletin, without the use of a great deal of arithmetic, just how much food should be used to furnish a certain number of calories, and for this reason there have

[1] Publication 120, "Food Allowances for Healthy Children", from Association for Improving the Conditions of the Poor, New York City.

been prepared convenient tables of standard portions of the dishes ordinarily used. A "standard portion" is the amount needed to furnish 100 calories and it is sometimes called a "100-calorie portion."

At the end of this section will be found a list of 100-calorie portions of foods.

The following method should be used when calculating the number of calories that should be served in a meal:

1. Make a list of the foods to be used.
2. Decide on the size of the portion of each to be served — as, for example, whether a whole orange or one half orange is the amount to be used.
3. Look at the table of "100-calorie portions" and find the size of the portion of each food needed to furnish 100 calories to the body.
4. If the portion furnishing 100 calories is more than you expect to serve, then multiply 100 by one half, one third, or by whatever proportion of the "100-calorie portion" is to be served, to determine the number of calories being supplied. For example, if one cup of cooked oatmeal is a "100-calorie portion" and only a half cup of cooked oatmeal is being served, it will be necessary to multiply 100 by $\frac{1}{2}$ to determine the number of calories served.
5. If the portion furnishing 100 calories is less than the amount served, then 100 must be multiplied by the number of times the portion is to be used to make the desired serving. For example, one half baked apple is a "100-calorie portion", but if a whole baked apple is to be served, it will be necessary to multiply 100 by 2 to determine the number of calories supplied.

The following is an example of the way of working out the number of calories served for breakfast:

BREAKFAST

FOOD	AMOUNT SERVED	CALORIES
Orange	½ orange	50
Whole milk to drink	¾ measuring cup	100
Oatmeal, cooked	½ cup	50
Cream, this for oatmeal	¼ cup	100
Sugar for oatmeal	½ scant tablespoonful	25
Bread	1 slice, ½ in. thick	100
Butter	½ tablespoonful	50
Total calories		475

Each meal may be worked out in the same way for each member of the family. The total amount of the foods needed for the entire family may be found by adding together the individual portions. No housekeeper will need to work this out every day, because after doing it several times she can estimate by the amount of food she is serving whether enough calories are being supplied in the diet.

Other necessary points to be observed in planning the day's diet are:

1. Furnish variety in the diet by serving different kinds of food or by changing the method of preparation.

2. It is necessary to have all the foodstuffs represented in the day's diet, and it is best to have them in good proportions in each meal.

3. Foods to be served together in the same meal should be of contrasting flavors — for example, rice cooked as a vegetable should be served with a strong-flavored vegetable like tomatoes.

4. A meal should not be too "dry", nor should all of the foods be creamed or moist in texture — for example, mashed potatoes are better served with a creamed-meat dish or with a meat served with gravy than with baked ham without sauce. Two creamed

vegetables should not be served in the same meal, but rather one creamed with a boiled or baked vegetable.

5. An attractive meal is enjoyed by the family. To be attractive it must be well cooked and served, with the foods combined properly in regard to flavor and appearance. The colors of foods in the same meal should harmonize, and when artistically combined they make the meal more attractive. The table decorations as well as the foods may carry out a color scheme.

6. It is always wise to consider the cost, and to remember that the most expensive foods often have no greater food value than cheaper kinds. One fourth to one half of the average income has to be spent for food, and when the housekeeper is careless in selecting the food, more money than is necessary may be spent.

7. It is necessary to change the diet to suit the season of the year. The body requires less food for warmth in summer than in winter, and there is less used for muscular energy, therefore foods containing large amounts of fat are not required. Some of the foods to be avoided in summer are hot breads, fat meats, pastries, rich cakes, sauces, and gravies.

8. It is very important to know that children need simple, well cooked foods, that milk is essential for every child, that butter is better for the child than a butter substitute because the butter contains vitamins, that fruits and cereals are essential, and that eggs, milk, and cereals are better to use than a large quantity of meat.

9. No one can balance meals properly without knowing which foods contain the foodstuffs needed.

HOME PROBLEMS AND QUESTIONS

From books on Nutrition or bulletins on Planning Meals find a table giving the number of calories required daily by your father and mother and the older members

of your family. How many calories per day will your family require? What other foods besides meat may be used to supply protein?

Make a list of foods you eat for one day and estimate the number of calories you have eaten. Have you eaten the number required? Which foods supplied the protein? Which the fat and carbohydrates? Which supplied mineral matter? Which vitamins? Did you eat foods from each of the five food groups given in the list on page 50?

Plan meals that might be used by your family for a day in summer, estimating the number of calories.

Plan the meals for a day in winter, estimating the number of calories.

Make a list of groups of vegetables that may correctly be served together.

Estimate the cost of the following meal for six persons:

Broiled mutton chops
Baked stuffed potatoes
Tomato salad with French dressing
Sliced peaches with cream
Sponge cake

Plan the menu and the table decorations for a "Yellow Luncheon" to be served in winter.

LABORATORY EXERCISES

FROZEN DESSERTS

VANILLA ICE CREAM

1 qt. cream 1 tsp. vanilla
$\frac{3}{4}$ c. sugar

Wash and scald the can, cover, and dasher of the freezer. Carefully place the can in the freezer. Place the ice in a heavy cloth sack and pound until it is broken into very small

pieces. Crush the rock salt or coarse salt. Pack the freezer with alternating layers of ice and salt, until the ice is just below the top of the can. Have the ice-cream mixture ready and pour it into the can; place the dasher in the can; cover; add ice until the can is covered. Turn the dasher slowly and steadily until it will not turn any more. Remove ice and salt from top of can; wipe off carefully; remove lid from can; take out dasher carefully; cover can and put a stopper in hole in cover. Drain off all water from the tub, re-pack with ice and salt, using a little less salt (about four parts ice to one part salt). Cover the can with ice; cover freezer; set in cool place and let stand several hours.

When using the vacuum freezer the following method should be followed: Wash and scald the freezer, and chill with cold water. Fill the center can three fourths full of the cream mixture, and place the cover on the can tightly so that it will not leak. Invert the freezer and fill ice compartment with the ice and salt, packing tightly; pour in one cupful of cold water, then cover securely. Let can stand inverted for twenty minutes, then turn and open inner container and with a spoon quickly scrape down the mixture that has frozen to the sides of the can. Cover the can, invert it, and let it stand twenty minutes. Again open and scrape down sides of cream can, cover, and invert until ready to serve. Why is the mixture scraped from the sides of the can during freezing?

LEMON ICE

4 c. water
2 c. sugar
¾ c. lemon juice

Boil sugar and water together for five minutes. Add lemon juice. Strain if not clear. Freeze.

CHOCOLATE MOUSSE

1 pt. cream
½ c. powdered sugar
4 oz. chocolate
¼ tsp. salt

Cut the chocolate into small pieces, or grate it. Place in a small saucepan in a pan of boiling water until it is melted. Whip the cream; add sugar, salt, and melted chocolate. Turn

into a mold, and pack the mold in a pan of ice and salt. Let it stand five hours.

Smaller portions of the recipes may be made if desired: then the freezing will require less time.

100-CALORIE PORTIONS

While the mixtures are freezing, let the class examine 100-calorie portions of the following foods that have been prepared by the teacher: eggs, beefsteak, bacon, bread, butter, oatmeal, milk, cheese, potatoes, dried beans, apples, onions, carrots, rice, macaroni, olive oil, cotton-seed oil.

REVIEW QUESTIONS

1. Define the term "calorie."
2. What is a "standard portion"? By what other name is it sometimes called?
3. How do scientists determine how many calories we need each day?
4. Which of the foodstuffs yield warmth and energy? Which of these are used by the body in other ways than for the production of warmth and energy?
5. How should the foodstuffs be distributed in the meals eaten in one day?
6. Can you explain why the boy twelve years old requires a greater number of calories per day than the woman ninety years old?
7. Are the following meals for a day well planned? Explain the reason for your answer.

BREAKFASTS

(1)	(2)
Eggs and bacon	Baked apple
Cocoa	Oatmeal
Hot baking-powder biscuit	Toast
	Cocoa

LUNCHEONS

(1)	(2)
Cream soup	Bouillon
Cheese strata	Apple salad with cooked dressing
Salmon salad	Lemon gelatine
Bread and butter	Bread and butter

DINNERS

(1)	(2)
Roast beef	Baked stuffed potatoes
Baked beans	Buttered carrots
Lettuce with French dressing	Fresh celery
Rice pudding	Apple pie
Bread and butter	Cake

8. What foods is it well to avoid in hot weather? Why?

9. Name some foods that may be served to small children; some that should not be served.

10. What are the characteristics of an attractive meal?

100-Calorie Portions of Uncooked Foods

Food	Weight in Ounces	Measure	Remarks
Apple	7.4	1	large size
Bacon	0.6	slice	$4\frac{1}{2}$ by $1\frac{1}{2}$ by $\frac{1}{16}$ inches
Banana	5.5	1	large size
Beef, round steak	2.2	1 serving	$2\frac{1}{2}$ by $2\frac{3}{4}$ by $\frac{1}{2}$ inches
Butter	0.5	1 tablespoon	
Cabbage	11.2	5 cups	shredded
Carrot	10.0	1	length $6\frac{1}{2}$, diameter 2 inches
Cauliflower	11.5	2 servings	
Cheese, American	0.8	cube	$1\frac{1}{8}$ inches
Chicken	3.5	1 serving	large
Corn on cob	9.0	2 ears	6 inches long
Cotton-seed oil	0.4	1 tablespoon	
Cream, 40 per cent		2 tablespoons	
Dates, dried	1.0	4 or 5	
Eggs	2.4	1	very large
Figs, dried	1.0	1	
Flour, white	1.0	$4\frac{1}{2}$ tablespoons	
Grapefruit	8.0	1 serving	$\frac{1}{2}$ small
Lettuce	18.5	2 heads	large size
Macaroni	1.0	$\frac{1}{4}$ cup	broken into 1-inch pieces
Milk, whole	5.0	$\frac{3}{4}$ cup	
Mutton chops	1.0	1 chop	

100-Calorie Portions of Uncooked Foods — *Continued*

Food	Weight in Ounces	Measure	Remarks
Navy beans	1.0	2 tablespoons	dried
Oatmeal	1.0	¼ cup	rolled
Olive oil	0.5	1 tablespoon	
Onions	7.0	4	medium-sized
Orange	9.5	1	large
Peach	10.5	3	medium-sized
Peas, green	3.5	¾ cup	shelled
Rice	1.0	2 tablespoons	
String beans	8.5	2¼ cups	fresh
Sugar	0.9	2 tablespoons	scant
Sweet potato	3.6	½ potato	medium-sized
Tomato, fresh	15.5	2 or 3	medium-sized

100-Calorie Portions of Cooked Foods

Food	Weight in Ounces	Measure	Remarks
Apple, baked	2.3	½ apple	large size, 2 tbsp. sugar
Baking-powder biscuit	1.2	2 biscuits	small
Bread, white, baker's	1.0	1 slice	½ inch thick
Cocoa	5.5	⅗ cup	
Corn, canned	3.5	1 serving	
Cornflakes	1.0	1 cup	heaping
Crackers (Graham)	0.75	3	
Crackers (soda)	0.75	3	
Custard	4.29	1 cup	
French dressing	0.6	1½ tablespoons	
Mayonnaise dressing	0.5	1 tablespoon	
Potato, baked	3.0	1	medium-sized
Potato, mashed	3.5	½ cup	scant
Oatmeal, cooked	7.9	1 cup	
Rice pudding	2.65	1 serving	small
Saltine cracker	0.8	8 wafers	
Shredded wheat	0.9	1 biscuit	
Sponge cake	0.9	piece	1½ by 1½ by 2 in.

THE PRESERVATION OF FOODS

Many kinds of fruit and vegetables, all meat, fish, and poultry, soon spoil unless preserved in some way. The spoiling of food is brought about by molds, yeast, and bacteria, which are called microörganisms. Yeast and bacteria are so small that they can be seen only through a powerful microscope, but molds can be seen without using a microscope. All of these microörganisms require food, warmth, and moisture for growth. They find food and moisture in many of our foods, and because they live in the food it changes and often spoils.

Food is preserved either by killing the microörganisms or by hindering their growth. There are four methods used: (1) by keeping food at a low temperature, (2) by drying, (3) by the use of preservatives, and (4) by sterilization.

Foods in cold storage are kept at such a low temperature that the growth of the microörganisms is hindered. Such foods as meat, eggs, green vegetables, and fruit may be kept in this way for different lengths of time without spoiling.

Drying is used for preserving certain fruits and vegetables, meat, and fish. The dried product lacks the moisture required by the microörganisms for growth; therefore their action in the food is hindered.

Preservatives are materials used to hinder the growth or to kill microörganisms. Sugar in quantity, salt, vinegar, and spices are harmless preservatives. Saltpeter and smoke are also used. There are also harmful substances that will preserve the food, but which are not healthful to use, such as formaldehyde, benzoic and salicylic acids.

The best method for preserving food is to kill the

microörganisms by the use of heat. This process is called "sterilization." In canning, the food is sterilized and then sealed in sterilized containers so that no more

GIRLS' CLUB EXHIBIT OF CANNED PRODUCTS
(At the Indiana State Fair)
THE PRIZES HAVE BEEN AWARDED AND THE RIBBONS TIED ON THE CANS

microörganisms can reach it from the air. Fruits, vegetables, meats, fish, and poultry may be preserved by this method.

LABORATORY EXERCISES

PRESERVATION OF FRUIT

MARMALADES

The general rule for the proportion of ingredients in marmalades is as follows:

Use one half as much sugar as fruit, by weight.
Use three cups of water to each pound of sugar.
Make orange marmalade.

ORANGE MARMALADE

1½ doz. oranges	Water
6 lemons	Sugar

Wash fruit; slice in very thin pieces without removing skins; remove seeds; cut into small pieces. Weigh the fruit, calculate the sugar that is needed; calculate the water that is needed. Place the water over the fruit and let it stand twenty-four hours. Boil gently for two hours, add sugar, and boil until the syrup is as thick as desired (usually about one hour). Place in small sterilized jars or glasses; set aside to cool.

When the marmalade is cool, melt paraffin and pour over the top; cover the jars or glasses with lids or paper.

GRAPE CONSERVE

2 qts. grape juice	2 lbs. seeded raisins
3 lbs. granulated sugar	1 lb. English walnut meats

Boil the grape juice with the raisins and sugar, until it thickens when a drop is placed on a cool saucer. Add walnuts, chopped fine. Cook a few minutes; place in sterilized jars or glasses. Cover the conserve with paraffin when it is cold.

GRAPE JUICE

10 lbs. Concord grapes	2 qts. water
2 lbs. sugar	

Wash the grapes and remove them from the stems, add the water; boil until the skins are soft. Strain through a wet jelly-bag. Re-heat the juice and add the sugar; boil for two or three minutes. Pour into hot sterilized jars or bottles; seal. When corks are used on the top of bottles, seal by using paraffin. This juice may be made in the fall, and the conserve made during the winter.

The grapes left in the jelly-bag may be run through a wire sieve, and the pulp added to the grape conserve, if the conserve is to be made at the same time as the grape juice. If not, the pulp may have sugar added and be boiled until thickened, and used as grape butter.

SWEET PICKLED PEACHES

7 lbs. peaches (after stones are removed)	2 oz. cinnamon
$3\frac{1}{2}$ lbs. sugar	1 qt. vinegar
	2 oz. cloves

Make a syrup of the sugar, vinegar, stick cinnamon, and cloves; boil until it is thickened. Cut peaches in halves. Add peaches and cook until they are tender. Remove each piece with a spoon and pack in a sterilized jar; boil the syrup until it is thick, and pour it over the fruit.

REVIEW QUESTIONS

1. What causes the spoiling of fruits, vegetables, and meats?
2. How is food preserved?
3. What foods are kept in cold storage?
4. What foods may be dried?
5. Name the materials that are used to preserve food.
6. What is the method of preservation used in making orange marmalade? Sweet pickled peaches?
7. What is meant by sterilization?
8. What is a sterilized jar? (See section on Jelly-making.)
9. Why must the sterilized jars be used while they are hot, and without wiping them out with a towel?
10. Which method of preservation is the best to use for food when it must be kept for long periods?

CANNING

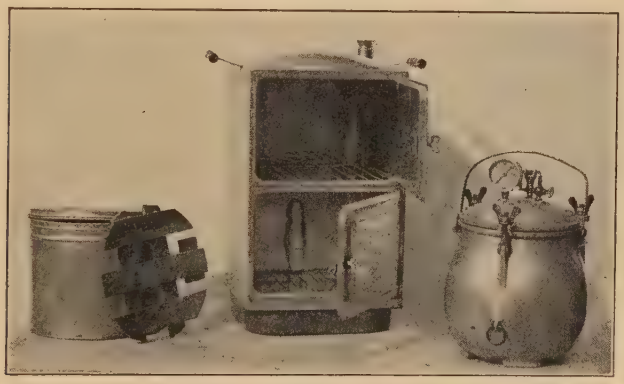
Canning may be done in two ways:

1. *Open-kettle method*, when the food is cooked until it is tender and sterilized, and is then put in sterilized jars and immediately sealed. This is the oldest method of canning foods.

2. *Cold-pack method*, when the food is packed in jars, the jar filled with liquid, — which may be syrup, water, or broth, — the rubber adjusted to the can, the cover placed in position, but only partly screwed or clamped on, and the jar placed in a cooker in which the

food will be sterilized and cooked until tender. The jar is then removed from the cooker and sealed at once.

Cookers used for canning by the cold-pack process are (1) the steam-pressure cooker, (2) the steam cooker, and (3) the hot-water bath cooker, the last being the most commonly used. This cooker can be made at home by using a wash-boiler or other container that has



TYPES OF CANNERS

LEFT TO RIGHT: HOT-WATER BATH AND FALSE BOTTOM, STEAM COOKER, PRESSURE COOKER

a lid and a false bottom, or rack, to raise the jars at least three quarters of an inch or an inch off the bottom of the container. The steam-pressure cooker and the steam cooker are manufactured in different types.

Canning can be done in the shortest time with the pressure cooker. Both the steam-pressure cooker and the steam cooker can be used for other kinds of cookery than canning, which makes them comparatively less expensive.

There are numerous types of jars that may be used, and any type is satisfactory when the cover fits well and is in a sanitary condition. Many old screw-top jars are not fit to use unless new lids are purchased,

because dirt cannot be cleaned from the crevices when it has collected in the old lids. In buying new jars, it is better to select those with glass lids and a large "mouth" or opening. Tin cans may be used instead of glass, but any food that will keep in tin will be more easily and safely canned in glass. Tin is used in commercial canning, because tin containers can be more easily packed and shipped.

Types of Jars Used in Canning

Good can-rubbers are necessary if the products placed in the cans are to keep well. Rubbers should be tested before being used, by stretching them to see if they will break, and by doubling them together and pressing at the fold to see whether the rubber will crack. Good rubbers will not be affected by either test.

Select for canning, firm fresh fruit that is not overripe, vegetables that are fresh and crisp, and meat that is in perfect condition. If poor products are used, the results will be poor.

Vegetables and meat are most successfully canned by the cold-pack method, and it is now considered safer to can them with a pressure cooker. Fruits keep their shape and color better when canned by the cold-pack method, but the open-kettle method may be used.

On the farm there are often fruits and vegetables, and perhaps meat, that would be wasted if not canned or preserved in other ways, to be used during the months when such foods are not available or are "out of season." When vegetables and fruits must be purchased for canning, the cost of the canned product may be higher than that of the commercially canned product; yet many people like to can such foods, especially fruits, because they prefer the flavor of the home-canned products. It is never a wise plan to can more foods than will be needed or used.

Canned products should be kept in a cool, dry place, preferably dark, since the color of some foods fades in the light. When canned foods are kept in a light place the jars may be wrapped in paper. Gummed labels may be used on jars of fruit and vegetables when wrapped, the label stating just what is in the can. Some housekeepers label all of their cans. This is not necessary, however, if the different products are kept in order in the storage cupboards or closets, for the edges of the shelves may be labeled to indicate the space for each product.

Canned products will spoil if air gets into the can or if sterilization has not been perfect. When there is the slightest doubt about the quality of a canned product, it should be thrown away, since such foods are often very dangerous to eat.

LABORATORY EXERCISES

CANNING FRUITS AND VEGETABLES

To can pears by the cold-pack method: Wash the pears, peel, cut into halves, and remove the cores. Place in a clean, hot, tested jar, packing carefully. Over the pears pour boiling syrup until the can is filled to within one fourth inch of top; adjust lid and partially seal. Place

can in hot-water bath cooker, having the water deep enough to come one inch above the top of the can. The time for boiling, or " processing " as it is called, is given in the table at the end of the lesson. Remove can from cooker and seal at once. Follow the directions about removing the can which come with the pressure cooker. Never remove the lid from the can after processing. Turn the can upside down, so that it can be observed for leakage (which means a poor seal) and place where there is no draft. Lay a towel over the cans until they are partly cooled. This will prevent any chance of a draft reaching the hot can and causing it to crack. When cold, jars may be wrapped in paper and stored, or placed in a dark, cool, dry place without wrapping.

To test a jar: Fill the jar half full of water. Test the can-rubber. Place the rubber and lid on can. Seal. Turn can upside down. If it does not leak after standing a few minutes it is in good condition to use for canning. When using the jar, be sure that the same lid with which it was tested is replaced on the jar. If a jar leaks, remove the lid and test with another lid. In using glass lids there sometimes will be found a rough spot on the lid or on the jar that may be removed by scraping with a knife, after which the fit will be perfect.

If jars are heated before using, then hot syrup, water, or broth may be poured into them without cracking the jar, and the jar may be placed in hot water in the water bath, which means a saving of time in cooking.

SYRUP FOR CANNING

Use three cups of sugar to two cups of water, boiling until as thick as desired. Usually for canning fruit by the method given for canning pears, a medium thick syrup would be best to use. A medium thick syrup is one that has begun to thicken and becomes sticky when cooled on the spoon. For very sour fruits a thicker syrup should be used.

To can tomatoes by the cold-pack method: Scald or " blanch " tomatoes $1\frac{1}{2}$ minutes. The easier way to do this is to place the tomatoes in a frying-basket and set the

A Canning-club Winner

With her exhibit of canned products

basket into boiling water. Lift out the basket and dip at once into cold water. Remove from water, remove skins and stem-ends. Pack tightly into tested jars, pressing down gently but firmly. This will cause enough juice to form in the can so that no boiling water need be added. Add 1 teaspoon salt to each quart. Adjust rubber and lid, partially seal. Place in hot-water bath, steam cooker, or pressure cooker. Cook for the required length of time, as given in the table at end of lesson. For finishing the canning, follow directions given in the recipe for canning pears.

All vegetables must be blanched, then cold-dipped before packing in cans. This reduces the bulk, does away with objectionable flavors and makes the color better. In canning most vegetables, it is necessary to add boiling water to fill the can after the food is packed in the can. The can should be filled to within a quarter inch of the top.

TIME TABLES[1]

Table 1 — Time required for blanching and processing fruits.

Product	Glass Jar	Tin Can	Blanch	Water Bath or Steam Cooker	Steam Pressure
					5 lbs.
		No. Can	Min.	Min.	Min.
Apples	pt. or qt.	2, 2½, 3	1½	20	10
Apricots	pt. or qt.	2, 2½, 3	1	20–30	10
Blackberries, other berries	pt. or qt.	2, 2½, 3		15–20	10
Cherries	pt. or qt.	2, 2½, 3		25	10
Currants	pt. or qt.	2, 2½, 3		10–20	10
Gooseberries	pt. or qt.	2, 2½, 3		10–20	10
Grapes	pt. or qt.	2, 2½, 3		10–20	10
Peaches	pt. or qt.	2, 2½, 3	1	20–30	10
Pears	pt. or qt.	2, 2½, 3	4–8 in syrup	20–30	10
Pineapple	pt. or qt.	2, 2½, 3		30	10
Plums	pt. or qt.	2, 2½, 3		15–30	12
Rhubarb	pt. or qt.	2, 2½, 3	1	20–30	10
Strawberries	pt. or qt.	2, 2½, 3		10–20	10

[1] From Bulletin No. 132, "Canning Fruits and Vegetables", issued by the Department of Agricultural Extension, Purdue University, La Fayette, Indiana.

Table 2 — Time required for blanching and processing vegetables.

Product	Glass Jar	Tin Can	Blanch	Water Bath or Steam Cooker	Steam Pressure		
					5 lbs.	10 lbs.	15 lbs.
		No. Can	Min.	Min.	Min.	Min.	Min.
Asparagus	pt.	2	4			40	
Beans, string	pt. or qt.	2	3–5 water 5–10 steam			40–50	
Beans, Lima	pt. or qt.	2	5–10 steam			60	
Beets	pt. or qt.	2	5–10	180	60	40	
Carrots	pt. or qt.	2	3–5	180	60	40	
Corn	pt.	2	1–5				80–90
Greens	pt. or qt.	2	4 water 15 steam			90	35
Okra	pt.	2	6–8			40	
Peas	pt.	2	3–8			50	
Peppers, pimientos	½ pt., pt.	1, 2	6–8 oven	30			
Pumpkin	pt. or qt.	2	10–15 steam	120–300		40–60	
Spinach	pt. or qt.	2	4 water 15–steam			90	35
Squash	pt. or qt.	2	10–15 steam	120–300		40–60	
Tomatoes	pt. or qt.	2, 2½, 3	1	25–30	15	10	
Vegetable mixture	pt. or qt.	2				40	30

Note. — Products canned in quarts and large sized tin cans will require longer period of processing than those canned in pints and No. 2 cans; hence the variation in time of processing given in above tables.

REVIEW QUESTIONS

1. Name the two methods used for canning fruits, vegetables, and meats.
2. Which is the older method? The better method?
3. Name the types of cookers that may be used in canning. In which can the processing be done most rapidly?
4. What are the requirements of a jar used for canning?
5. What type of jar is best to purchase?
6. What is the price per dozen of pint jars? Of quart jars? Of half-pint jars?
7. Is it advisable to use tin cans for home canning?
8. State the method for testing rubbers.
9. How should a jar be tested before using?
10. What should be the quality of fruits and vegetables selected for canning?
11. What is meant by the term "processing"? "Blanching"?
12. Why must the lids never be removed from the cans after processing?

JELLY-MAKING

Jelly is made from the juice of fruits. Good jelly is clear, of a pleasing color, tender, and firm enough to keep its shape when turned out of the mold. It should not, however, be so stiff that it does not "quiver."

Fruit juice can be made into jelly when it contains two substances, (1) pectin and (2) acid. All fruits do not contain these in sufficient amounts to make good jelly; and often it is necessary to combine the juices of two fruits before the juice will "jell." Sugar helps to make the juice form jelly, but unless pectin and acid are present, no amount of sugar will have that effect.

Fruits used for jelly should not be over-ripe, and sometimes it is better to use green fruits, because as fruit ripens it contains less pectin and acid. Tart apples, grapes, currants, crab apples, and plums are good fruits to use for making jelly. Sweet ripe apples, strawberries, blackberries, peaches, and pears are poor fruits from which to make jelly.

Lemon and orange peel contain pectin in considerable amounts and are sometimes used to make fruit juices "jell." Remove the yellow layer of the peel and put the white material that is left through the food-grinder, cover with water and let stand several hours, then cook slowly for two or three hours, strain the liquid, and add it to the fruit juice that lacks pectin. Commercial pectins can be purchased in most grocery stores and are often used in jelly-making.

Sometimes fruits lack acid and are improved for jelly-making by adding lemon juice.

It is always best to test the juice in order to determine how much sugar should be added to make good jelly, since fruits of the same variety vary when grown

under different conditions. This is done by placing one teaspoonful of fruit juice and one teaspoonful of grain alcohol together in a glass and allowing it to stand for five minutes. Pour slowly from the glass and observe the mass formed; if a firm mass that does not break apart has been formed, then the proportion of

FOUR H CANNING CLUB GIRLS SCORING CANNED PRODUCTS, USING SCORECARDS

one cup of sugar to each cup of juice is correct; if the mass breaks apart into several pieces, use three fourths of a cup of sugar to one cup of juice; if the mass shows no distinct lumps, use one half cup or less of sugar to each cup of juice. This test saves a great deal of time and trouble in making jelly.

In straining the juice from the fruit after cooking, a jelly-bag is used. It is usually made from firm cotton cloth that has been thoroughly washed and boiled. The bag may be made three-cornered in shape,

so that the juice drips from a corner when hung to drain.

Jelly is usually put up in glasses made for the purpose. These should be sterilized by placing them in cold water, bringing it to the boiling-point and boiling for twenty minutes. Do not wipe the glasses; take them from the water with a lifter or wooden spoon and fill at once.

Jelly should be covered. An easy method is to use paraffin, which may be melted and poured over the top of the jelly. Cover the glasses, either with the lid that comes with the regular jelly-glass, or with white paper tied on. Store in a dark, cool, dry place.

LABORATORY EXERCISES

JELLY-MAKING

Experiment: Test the following juices to determine what proportion of sugar to juice should be used: grape, sweet apple, plum, crab apple, peach. If necessary, add a measured amount of juice, extracted from lemon peel or orange peel, to the tested juice to make it respond to the test.

Try adding some commercially made pectin to the juices.

CRAB APPLE JELLY

Wash the apples, cut into quarters, and remove cores. Add water to the apples, using about half as much water as there is fruit. Boil until tender; place in wet jelly-bag; drain, but do not squeeze bag. Measure the juice and measure the amount of sugar to be used according to the pectin test. Boil the juice a few minutes; add the sugar, which has been warmed by placing in the oven; boil gently until the jelly coats the spoon or until a drop "jells" when dropped on a cold saucer. Pour into hot sterilized glasses.

What can you make from the pulp and skins in the bag?

GRAPE JELLY

Choose grapes that are not over-ripe; wash and pull from stems; place in stew-kettle; add one cup of water for each four quarts of grapes. Cook until the grape skins burst and the fruit is thoroughly softened; place in wet jelly-bag to drain. What proportion of sugar should be used? Follow directions given under Crab Apple Jelly.

TYPES OF JELLY GLASSES

Make peach or sweet apple jelly: (1) by adding pectin extracted from lemon or orange peel; (2) by adding commercially made pectin.

Compare the cost of the two jellies.

REVIEW QUESTIONS

1. What two substances must fruit contain before good jelly can be made from it?
2. Give the steps in jelly-making.
3. How should a jelly-glass be sterilized?
4. How should jelly be cared for after it is cooled?
5. What are the characteristics of good jelly?

CHRISTMAS LESSONS

Home-made candy, packed attractively in pretty boxes or baskets, makes a good Christmas gift.

Small children are better without candy, but it may be used by older persons if it is eaten in reasonable amounts. Candy is more easily digested at the end of a meal than between meals. Candy contains a large proportion of sugar, and sugar when eaten alone is irritating to the digestive organs. Sugar does not contain all of the food constituents or the vitamins which the body needs, and when candy is eaten

between meals, or in too large amounts, the appetite is spoiled and not enough other foods are eaten.

A great deal of sugar is found in some dried fruits, such as raisins, dates, and figs, and in this form sugar is better for the small child than in candy.

Sugar is made either from sugar cane or from sugar beets. The juice, which is extracted by crushing between rollers, is then purified and evaporated; the crystals are removed from the syrup, then dried and sold as "granulated" sugar. When the syrup is run into molds, it hardens, after which it may be sawed into cubes; in this form it is called "loaf" sugar. When ground fine, it is sold as "powdered" sugar; when still more finely ground, it is called "confectioner's" sugar. Brown sugar is sugar that is unrefined.

When making candies that are to be of a creamy consistency, it is better to use part glucose instead of all granulated sugar. Commercial glucose is a syrup that does not crystallize, and therefore helps to keep the candy smooth and creamy. Commercial glucose is manufactured by boiling cornstarch with an acid, and is usually sold in tin containers.

By boiling candy mixtures to different temperatures, different types of syrup may be made. It is always best to use a candy thermometer in order to know when the syrup is cooked enough but not too much. When making fudge, panocha and fondant, the candy should be cooked until it reaches the "soft-ball" stage, 236° F.; for chocolate caramels, cook to the "hard-ball" stage, 254° F.; for butterscotch, popcorn balls, and molasses taffy, cook to the "crack" stage, 270° F.

"Caramelized sugar" is sugar that has been heated without moisture until it melts and becomes a brown syrup. When this is poured over peanuts it is known

as "peanut brittle." Caramelized sugar is used also for flavoring custards and cake icings, and in sauces.

Home-made candies are often purer and cleaner than commercially made candies. When buying, select candy that is handled in a sanitary manner and kept away from dust or flies.

Many stores selling candy also sell sodas or other ice-cream mixtures and beverages of various kinds, and it is very important to know how the soiled dishes and spoons are handled. These should be washed in hot clean water, not merely rinsed in cold water. Some stores use paper dishes or cups, which is a better plan.

Other materials that may be used in cookery to take the place of sugar are honey, maple sugar, and syrups of different kinds.

LABORATORY EXERCISES

CANDIES

FONDANT

2 c. granulated sugar ½ c. cold water

Mix the sugar and water, place in saucepan over the fire and stir until sugar is dissolved. Allow the syrup to boil gently until it reaches the "soft-ball" stage. Turn into a greased platter and let stand until a thin film forms on the top, then beat with a wooden spoon until it becomes creamy and white. Wash the hands in cold water and knead the fondant. Wrap the fondant in oiled paper and let it stand in the ice-box a few hours, or longer if desired. It is then in good condition for making into various kinds of candy.

Use in the following ways:

1. Add chopped English walnut meats to some of the fondant, flavor with vanilla, mold into balls.
2. Cover almonds with flavored fondant.
3. Remove the seeds from dates and refill with the flavored fondant.

4. With a toothpick, take up a tiny bit of coloring material and add to fondant. Knead until thoroughly mixed, add any flavoring preferred, mold into shape desired.

PEANUT BRITTLE

1 c. sugar
½ c. peanuts

Place sugar in frying-pan over fire and stir until the sugar is melted and the syrup is a light brown color. Add peanuts and pour immediately into a buttered pan or plate. Mark into squares when the brittle is slightly cooled.

PANOCHA

1 c. brown sugar
1 c. granulated sugar
½ c. milk
1 tbsp. butter
1 c. nut meats
1 tsp. vanilla
1/16 tsp. salt

Mix sugar, milk, and salt. Boil until it reaches the "soft-ball" stage; add butter, vanilla, and chopped nuts; cool slightly, beat until thick, spread on buttered pan. Mark into squares before it is too hard to cut easily.

PARISIAN SWEETS

1 c. figs
1 c. dates
1 c. nuts

Clean dates and figs, and grind the three ingredients through food-grinder. If they are mixed before grinding they blend more easily. Place on bread-board dredged with powdered sugar, knead thoroughly, press out into sheets about one half inch thick. Cut into squares; roll each square in powdered sugar.

Pack boxes and baskets of candy that can be used as gifts for your relatives or friends.

Pack a basket or baskets of food that can be sent as Christmas presents to poor families in the neighborhood. What foods would be suitable to go in the basket? How can the money be earned that will be needed for buying the food?

REVIEW QUESTIONS

1. When should candy be eaten? Why?
2. What may be substituted for candy when a small child wants sweets?
3. From what is sugar made?
4. In what forms may sugar be purchased?
5. What is the price per pound of granulated sugar? Of powdered sugar? Of lump or loaf sugar?
6. How is loaf sugar used?
7. Why is it better to use a thermometer when making candy?
8. To what temperature should a syrup be cooked for the "soft-ball" stage? "Hard-ball" stage? "Crack" stage?
9. Give examples of candies with which each of these temperatures should be used.
10. What is caramelized sugar?

FOOD FOR THE SICK

When serious illness occurs in the family the patient is often taken to a hospital for treatment because there conditions are such that the best of equipment is available, with trained workers to look after the welfare of the patient. There are, however, many cases of illness not serious enough to make it necessary to send the patient to the hospital, yet in which the patient must stay in bed and have good care. In such cases some one in the home must do the nursing and should have some knowledge of such work.

One of the most important things for the home nurse to know is how to prepare and serve the food which the patient needs. Food is especially important, because a poorly nourished body cannot resist nor overcome disease, and in many cases regulating the diet is the main treatment. For special diet of this sort, the home nurse will follow carefully the doctor's instructions regarding kind, amount, and preparation of food.

No one in bed can digest the kind or quantity of food

that the person can who is taking exercise. Patients often are given too much food while in bed; in other instances the patient does not get enough food.

If the invalid's appetite is poor, perhaps it can be stimulated by serving fruit juice, by giving meat broth, or by making the tray extremely attractive.

Invalid's Tray, Well Arranged

To make the invalid's tray attractive there are several points to remember:

1. Do not have too great a variety of foods on the tray at one time.
2. Do not serve large portions of food.
3. Have all foods well cooked and served in a neat way.
4. Use attractive dishes and linen that is absolutely clean.
5. A flower on the tray makes it more attractive. It may be laid on the tray or placed in a small vase which is set on it.

6. Sometimes serving the meal as two courses will make it more appetizing to the patient.

7. Used dishes and trays should be removed from the room as soon as the patient is done with them, and in the case of contagious diseases, such as a cold or a sore throat, keep the dishes separate from those used by other members of the family. They should be washed separately, then placed in a kettle of cold water, set on the stove, and slowly brought to boiling-point; then allowed to stand in the water until it is cold. Always wash your hands with soap after handling dishes or other things touched by the patient.

8. The tray used for serving the meal should be large enough, but not so large that it is hard to handle. A rectangular tray is more convenient than a round one.

9. The temperature of the food served must be watched carefully. As a rule hot foods should be served hot and cold foods served cold, but under certain conditions the rule may have to be modified.

10. Never ask a sick person what kind of food is desired. When the food is a "surprise" it sometimes stimulates the appetite.

Dietaries for invalids may be classified in the following way:

1. *Liquid,* including broths, beef extract, beef tea, milk, gruels, egg-nog, cream soups, cocoa, etc.

2. *Soft,* including soft-cooked eggs, milk toast, junket, cooked custards, jellies, etc.

3. *Soft solid,* including eggs, creamed toast, asparagus, baked custards, tender chicken, oysters, creamed sweetbreads, etc.

4. *Special diet,* one ordered by a physician for a particular case.

In many cases of illness it is well to consult the physician regarding the type of diet that the patient should be given. In the case of high temperatures, it is wise to give plenty of water with a liquid diet; in cases of bad colds, grippe, or similar diseases, a soft diet may be used; in cases of constipation, use coarse foods which contain large quantities of cellulose, such as Graham bread, vegetables, fruits, and cereals. The fruits are especially valuable in the treatment of constipation because of the organic acids they contain. Any one troubled with constipation should eat meals regularly, take plenty of exercise, drink plenty of water, and should be regular in regard to the calls of nature.

The convalescent patient should have his or her requests for certain foods gratified whenever the food is suitable and the requests reasonable.

HOME PROBLEMS AND QUESTIONS

Read in books and bulletins on nursing about the proper kind of sick-room. Make a drawing showing how the room should be arranged.

What type of clothing should a home nurse wear? Why?

Make a list of rules a home nurse should follow in caring for any one who is sick. Perhaps a nurse in the neighborhood can give demonstrations on making the patient's bed, giving the patient's bath, and on first aid.

If there is some one ill in your home, perhaps you can help in caring for the patient or can prepare the meal tray.

Make a list of the foods which should be included in the diet of any one troubled with constipation.

Plan a day's menu for your sister or brother or

A Convenient Arrangement of the Tray on the Top of a Pillow. Observe the Glass Tube Through Which Liquid Food May Be Taken

cousin, twelve years old, to eat when sick with (1) cold, (2) fever, (3) constipation, (4) anæmia.

What would you do for any one who fainted? Ask the school nurse.

LABORATORY EXERCISES

INVALID COOKERY

JUNKET

¾ c. milk	¼ junket tablet
1 tbsp. sugar	1 tsp. cold water
¼ tsp. vanilla	Few grains salt

Dissolve a junket tablet in the cold water. Heat milk in top part of double-boiler, add sugar, salt, flavoring, and the dissolved junket tablet. Pour quickly into small molds, let stand in a warm place until set, then put in a cold place to chill. Remove from molds and serve with or without sugar and cream. Sugar in recipe may be omitted if desired.

EGGNOG

1 egg	1½ tbsp. fruit juice *or*
¾ tbsp. sugar	¼ tsp. vanilla
Few grains salt	⅔ c. cold milk

Beat egg slightly; add sugar, salt, and fruit juice slowly; and add the milk gradually. Strain and serve. Sugar may be omitted if the fruit juice is sweetened.

BEEF TEA

1 lb. round steak 3 c. cold water
Salt

Put the meat through food-grinder. Add water and let stand for one hour. Place in double-boiler and heat for two hours, only allowing the water in the lower part of double-boiler to simmer. Strain the liquid from the meat, letting it drip dry; remove the fat. To remove the fat allow the broth to get cold, when the fat will form a cake on top of the

soup and can be easily lifted or scraped off. Another way to remove the fat, while the soup is warm, is by placing a small piece of ice in a clean white cloth and running it around over the top of the soup. Reheat the broth for serving.

Beef tea is usually served when the doctor orders it for a patient, since other soups are more appetizing for invalids who can eat them.

BRAN MUFFINS

(Good for any one troubled with constipation)

1 egg
2 tbsp. molasses or sugar
1 c. milk
1 c. bran
½ c. Graham or whole-wheat flour
½ c. raisins
½ tsp. salt
2 tsp. baking powder

Beat the eggs until light, add the milk, then the molasses slowly. Mix the bran, flour, salt, and baking powder, and stir the dry mixture into the liquid mixture. Chop the raisins, flour, and add to mixture. Grease muffin tins and fill each about two thirds full. Bake twenty to thirty minutes in a moderate oven (350°–400° F.).

EGG IN A NEST

Beat the white of an egg until stiff, add a few grains of salt. Butter a slice of toast and pour two tablespoonfuls of boiling water over toast. Place the egg-white on top of the toast, forming a nest. In this nest carefully place the unbroken yolk of the egg. Bake in a moderate oven until the egg-white is slightly brown.

REVIEW QUESTIONS

1. State the points that are essential to remember when preparing an invalid's tray.
2. Into what classes may diets for invalids be divided?
3. Make a day's menu for a patient who is in bed with a bad cold. What type of diet is this?
4. What foods should be eaten when one is troubled with constipation?

5. State several ways in which milk may be served to invalids living on a liquid diet.

6. State several ways in which egg may be served to an invalid living on a soft diet.

Egg in a Nest

7. Why are milk and eggs important foods to use in invalid cookery?

8. Should a large amount of meat be used in an invalid's diet? Why? Name some kinds to serve and ways of preparing them for an invalid on a soft-solid diet.

9. Where can junket tablets be purchased?

PART II

CLOTHING AND TEXTILES
PLANNING AND FURNISHING THE BEDROOM
CLOTHING BUDGETS

CLOTHING AND TEXTILES

THE SEWING–BASKET

A SEWING-BASKET in which to place the implements used for sewing is needed by every seamstress if she is to do her sewing easily and well. A basket or box can be kept in better order than a bag, and sewing-materials when kept in a box or basket are less rumpled than when put in a bag.

The implements needed in the box are scissors or shears, tape-line, needles, emery bag, pincushion, pins, thread, and thimble. In order to insure good work the implements must be of the right kind and in good condition.

Scissors are six inches or less in length, while shears are over six inches in length. It is always best to buy shears when both cannot be purchased, because shears are always needed for cutting out garments.

Shears may be bent or straight in shape; the bent ones are easier to use because they do not raise the cloth far from the table in cutting. Select shears or scissors that are made of forged steel and that are not so tightly joined that they work hard. Scissors or shears must be sharp if they are to do good work. Be careful about allowing them to drop on the floor, since this loosens them so that they will not cut a true edge and may bend or break the point. Never buy cheap scissors or shears, because cheap ones will never do satisfactory work. Buttonhole scissors used for cutting buttonholes are very convenient to have in the work-box.

The other implement found in the work-box made from steel is the needle. Needles have been used for a longer period than any other implement used for sewing. Needles made of fish-bones, of ivory, and of

Good Types of Shears and Scissors
The pair at the left are "bent shears"

bronze were used in early times. Steel needles originated in Spain and were introduced into England during the reign of Queen Elizabeth.

Needles, while very small, require a great deal of care in manufacture, and pass through the hands of a great many workmen before they are finished. Ordinary sewing-needles are sold in packages with twenty-five needles in each package.

There are three kinds of needles used for plain sewing: (1) *sharps*, the longest needles; (2) *ground-downs*, the

next in length; and (3) *betweens*, which are the shortest needles.

Needles are of twelve sizes, the sizes being numbered from 1 to 12, the No. 12 being the finest. A package of needles may contain needles of different sizes or may contain needles all of one size. Sizes 8, 9, and 10 will be used most in our class work, as these are the sizes used for most ordinary sewing.

If needles and thread are too coarse for the sewing that is being done, the stitches will never look well. Select the thread that is near the size of the thread in the cloth on which the sewing is to be done, and select a needle just large enough to carry the thread. Good sewing cannot be done with a bent or rusty needle. Needles, when not being used, should be placed in the pincushion or in a needle-book and not left in the sewing.

LABORATORY EXERCISES

DIRECTIONS FOR LABORATORY WORK

Personal appearance: The hands should be washed before beginning any sewing. To prevent the work from becoming soiled, a wash dress may be worn in the laboratory, or the protection square used when a wool dress is worn.

Position: Sit erect with back against chair and with feet on the floor. Hold the work so that there is no need for stooping over. Never pin work on your knee when sewing. Sitting with a table in front of you, when sewing, is the best plan.

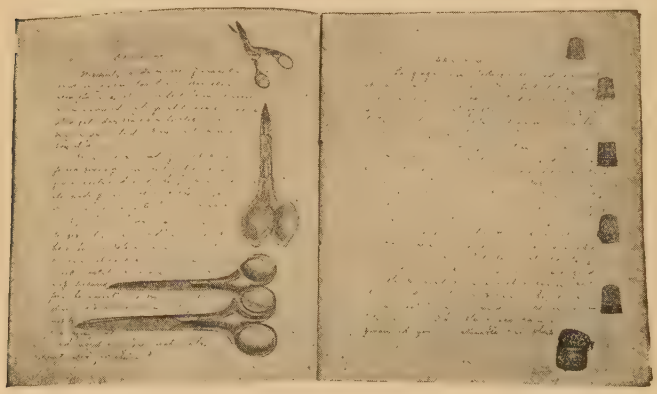
Care of work: Needles should never be left in the material when one has finished sewing, because dampness may cause the needle to rust and this injures the material. Thread-ends on all spools should be slipped through the groove made for that purpose. The tape-line should be neatly folded, and all other equipment in the sewing-box placed in

order. All materials used should be neatly folded before they are placed in the box, basket, or bag.

IMPLEMENTS FOR THE SEWING-BASKET

The emery bag is used for keeping the needle bright and free from rust.

The tape-line is always needed in doing accurate work. Select one made of cloth, double, and stitched



Pages from the Booklet on "The Sewing-basket"

on both edges, and finished with brass tips on the ends. It should be sixty inches in length and every inch should be divided into eighths.

Pins used in sewing should have a sharp point and should not be coarse. English pins are the best to buy because they are fine and sharp-pointed. Pins are made from brass wire and require a great deal of work in making. A "paper" contains 360 pins. Often pins to be used for sewing are sold by the box. Never use bent or rusty pins in sewing.

The best pincushion is stuffed with wool rather than cotton because needles and pins run through the wool

much more easily than through the cotton. The pincushion may be used only for the pins and a needle-book used for the needles.

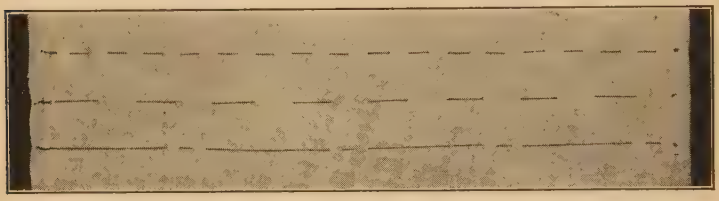
Thimbles are made from many materials, the most used materials being silver, gold, aluminum, celluloid, and brass. Ivory and pearl thimbles are sometimes used. Thimbles may be plain, or decorated with etching or with jewels. Aluminum thimbles are very cheap but do not wear well. These are good to use in the class work because there is danger of losing a more expensive thimble. Silver thimbles are generally used by most seamstresses. A thimble made of brass should never be selected.

The first thimble in England was made by John Lofting about 200 years ago. It was worn on the thumb and was called a "thumb bell." Our great-grandmothers used thimbles that were open on top and the needle was pushed through the cloth with the side of the thimble.

In selecting a thimble, buy one that is large enough to allow the end of the finger to strike the end of the thimble. The size is told by a number placed on the thimble.

Sewing-thread is made from cotton, linen, and silk. Fine, smooth, even thread was not made until the sewing-machine was invented. A great deal of thread is now made in Scotland, but there are large factories in America. Cotton and linen threads are made in different sizes and are sold by number, the higher the number the finer the thread. The numbers do not run consecutively. Silk thread is numbered by letters, A, B, C, and D being the usual sizes. Besides the ordinary sewing-threads there are many kinds made for special purposes, such as buttonhole twist and darning cotton.

When removing thread from the spool, measure a strand the length of the arm, cut it from the spool, and fasten the cut end on the spool through the little groove made for this purpose on the edge of the spool.



Types of Basting

LABORATORY EXERCISES

LEARNING TO USE EQUIPMENT

Scissors: Learn to hold scissors correctly. Practice cutting a straight edge. If bent shears are used, lay a piece of paper on the table and cut across it with the shears. How should they be held to keep the paper as nearly as possible flat on the table? When would it be convenient to use bent shears?

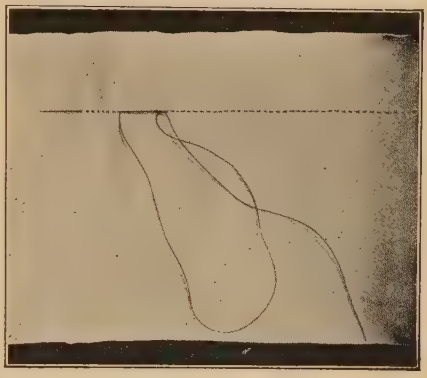
Tape-line: Make the following measurements with the tape-line, and indicate length on piece of paper: $\frac{5}{8}$ inch; $\frac{3}{4}$ inch; $1\frac{1}{4}$ inches; $\frac{1}{2}$ inch; $\frac{7}{8}$ inch; 1 inch.

Thread: Measure length of thread to be used in needle; cut from spool with scissors, never bite nor break the thread. Fasten thread-end on spool. Thread needle. Practice making knot in end of thread; a knot should not be too large and should never have a "tail."

Thimble: Try on the thimble. Of what material is it made? Is it the proper size? Use it in doing all hand sewing.

Basting: This is used to hold material in place and to serve as a guide when sewing. Basting must be done in such a way that the material will be held firmly, and when it is to be used as a guide it must be straight. If possible, basting should be done in such a way that the final stitches

in the sewing will not run through nor across the basting-stitches; it is then easier to remove the basting, and there will be no danger of breaking the thread used in the final stitching. Basting-stitches may be long, or short, or uneven in length. One-fourth inch basting-stitches should be used for holding together materials for stitching on the sewing-machine; for long seams in skirts use three $\frac{1}{4}$ inch basting with one 2- or 3-inch basting-stitch. Practice making basting-stitches.



THE RUNNING STITCH
THE NEEDLE IS READY TO BE PULLED THROUGH

Running-stitches: These are very small stitches, like basting-stitches, used to hold together two or more pieces. The stitches should be even in length, and the row of stitches kept straight. Hold the material between the thumb and forefinger of each hand, with the thimble against the end of the needle; take as many stitches on the needle as possible before drawing it through, pushing the needle with the thimble-finger and guiding it with the other four fingers. Fasten thread by taking two stitches, one over the other. Practice making the running-stitch.

REVIEW QUESTIONS

1. Name the implements that should be in the sewing-basket.
2. Of what materials are thimbles made? Which are best?
3. What are shears? Scissors?
4. How should scissors be cared for?
5. Name three kinds of needles used for plain sewing.
6. What kind of pins should be used when sewing?
7. What kind of tape-line is best to buy?
8. How is the size of cotton thread indicated? Silk?

THE SEWING-MACHINE

The sewing-machine is used now so commonly that many persons do not know that sewing-machines have been in general use for only about sixty years. The first sewing-machine was made by Elias Howe of Spencer, Massachusetts, in 1846. In 1851 Isaac Merritt

AN ELECTRIC SEWING-MACHINE ON A TABLE

WHEN THIS MACHINE IS NOT IN USE, IT CAN BE PUT AWAY ON A CLOSET OR CUPBOARD SHELF OUT OF SIGHT

Singer began making sewing-machines, and "Singer" sewing-machines are still used, but they have been much improved in structure. In 1856 James A. E. Gibbs, a farmer of Virginia, made a machine that used only one thread. Another man who helped improve the very early sewing-machines was Allan B. Wilson. At present there are many makes of sewing-machines on the market.

All sewing had to be done by hand before the invention of the sewing-machine, and the making of a garment was a slow and tedious process. Little girls were taught to sew when they were very young, and many beautiful samples of their sewing have come down to us. One kind of such sewing is the "sampler" made on canvas with elaborate patterns in cross-stitch. Another favorite way of teaching a girl to sew was by having her make a patchwork quilt. While we should be very glad that we do not now have to do all our sewing by hand, yet we must learn how to do good hand-sewing, since there are many places in garment-making where it should be used if the garment is to look well finished.

There are two types of sewing-machines that may be purchased:

1. The double-thread, or lock-stitch machine, on which two threads are used. One can stitch on either the right or wrong side of the material with this machine, as the stitching should be alike on both sides. This is the most common type of machine.

2. The single-thread, or chain-stitch machine, on which only one thread is used. One must always stitch on the right side with this machine, as the wrong side of the stitching is in the form of a chain-stitch. When finishing the stitching, the thread must be fastened carefully, as the stitching pulls out very easily. One type of chain-stitch machine is used for sewing together the tops of sugar, flour, and salt sacks, but this is a machine with a very different kind of stitch from the one made by the chain-stitch machine used for making garments.

Sewing-machines run by electricity are now used in some homes. These are very helpful when there is a great deal of sewing to be done. Machines in garment factories are usually run by electricity.

A sewing-machine must be studied carefully, so that one may understand how the parts are used and how they should be cleaned and oiled. A sewing-machine will not do good work unless it is in good order.

HOME PROBLEMS AND QUESTIONS

Make a list of the names of different kinds of sewing-machines which you have seen or heard about. What is the price of a good sewing-machine?

Have you ever seen a machine that carries a spool of thread instead of a bobbin underneath? What is the advantage in using such a machine?

Name two makes of single-thread machines.

LABORATORY EXERCISES

Practice stitching on the machine: Examine the machine to be used and find the following parts on a double-thread machine:

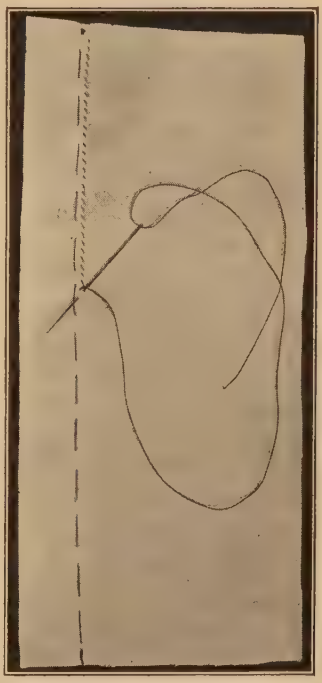
1. Bobbin on which the lower thread is wound.
2. Shuttle which carries the bobbin.
3. Plate upon which the cloth rests in sewing.
4. Feed which pushes the cloth along when stitching.
5. Presser-foot which helps to hold the cloth in place. How is it raised and lowered?
6. Needle-bar which holds the needle. How is the needle fastened into the bar?
7. Spool-holder for holding the upper thread.
8. Bobbin-filler to use in winding the bobbin.
9. Tension, used for regulating the tightness of the stitch.
10. Screw, to regulate the length of the stitch.
11. Treadle, upon which the feet rest.
12. Connecting-rod which attaches the treadle to the machine or " head " on top of the table of the machine.

13. Places for oiling. The book of directions coming with the machine will help you find these places.

14. The method of covering the "head" when it is not in use.

Practice running the machine without threading it until you can work the treadle easily, and until you can hold the cloth under the needle correctly. When you can make a straight row of needle-holes across the cloth, you may practice making a hem by machine.

Be careful to have the needle-bar raised as high as possible before removing the cloth from under the presser-foot, so that you will not bend the needle-point. What are the directions for removing the cloth from the machine, as given in the book of directions?



METHOD OF PLACING THE NEEDLE IN DOING HEMMING BY HAND

NOTE THAT THE BASTING IS FAR ENOUGH FROM THE FOLD TO PREVENT CATCHING THE BASTING WITH THE NEEDLE

STITCHES

Hemming: A plain hem is made by turning the raw edge of material toward the wrong side, one eighth to one quarter inch, depending on the width of the hem; creasing this fold firmly and folding again toward the wrong side the desired width. A piece of cardboard marked to show the width of the hem may be used as a guide to keep the hem even when folding. Baste the hem. In making the protection square, the hems will be stitched by machine.

On what type of garments or other articles would it be better to hem by hand instead of by machine?

To do hemming by hand: Hold the material over the first finger of the left hand with the thumb and middle finger on top of the hem. Hide the knot in the thread under the folded edge of the hem. Take a tiny stitch in the material close to the fold, but before pulling the needle through, take up a tiny bit of the fold, holding the needle in a slanting position with its point toward the left shoulder. Pull needle through. Repeat, taking the next stitch a little beyond where the needle came out. Fasten the hemming by taking stitches one over the other. A hem is used as a finish for the raw edge of cloth.

REVIEW QUESTIONS

1. When and by whom was the first sewing-machine made?
2. Name some other men who helped to improve the early sewing-machines.
3. What two types of sewing-machines are there? Which is used in the sewing-room? Which kind do you have at home?
4. Name the principal parts of the "head" of a sewing-machine. For what is each part used?
5. What is the treadle? How is it connected with the other parts of the machine?
6. How is the stitch regulated on the machine?
7. When the sewing is finished how should the machine be cared for?
8. Name four makes of double-thread sewing-machines; name one make of chain-stitch machine.
9. Why is it important to learn to sew well by hand?

OTHER THINGS TO USE WHEN SEWING

The protection square is very necessary when one is wearing a wool or silk dress, as it keeps the sewing material from rubbing against the dress and becoming soiled, and keeps ravelings off the dress.

A sewing-apron is sometimes worn, but is not so convenient as the protection square. If a sewing-apron

is used, it should be a straight apron, without a belt, hanging from the shoulders, since this prevents mussing the dress designed with straight lines. Sewing-aprons may be made from various materials. Three which may be used are dimity, lawn, and gingham. All of these are cotton materials. The same materials may be used for the protection square ; long cloth, nainsook, and light-weight muslin are also suitable for this purpose.

Dimity is a material 30–36 inches in width, light weight, thin cloth, with cords or ribs which distinguish it. It is made in white, in plain colors, or in figures. The cord or rib in dimity is made by running a heavy thread through the material when it is being woven. The cord may run lengthwise only, or may run both lengthwise and crosswise, in which case it is called cross-barred dimity. The material usually breaks or splits along the cords when it wears out.

Lawn is a thin starched material, 36–40 inches in width, and is made in white, in plain colors, or in figures.

Both lawns and dimities fade badly when washed, especially those made in figures. They also rumple easily. These materials, however, make dainty aprons and are often trimmed with lace or finished with fancy stitches, such as feather-stitching. Lawns and dimities are used also for summer dresses. When selecting them, either for aprons or dresses, choose a piece that is firmly woven of fine threads. This will require buying the medium or high-priced materials, but it is more economical to buy good material for such garments than to buy cheap cloth that will shrink and fade badly the first time it is washed. It is not economical to use time or spend money for making garments from cheap materials.

For the protection square a cheaper grade of lawn or dimity may be used. Why? It is difficult to do good sewing, however, when the materials are cheap, because they may be loosely woven, heavily sized, and pressed so that they are hard to straighten.

THE COVER OF THE "TEXTILE BOOK"
LIGHT GREEN PAPER WITH DARK GREEN DESIGN IN WATER COLOR, TIED WITH A GREEN CORD

Ginghams are used probably more than any other fabric. They are of several types and vary in width and price. They are made in stripes, checks, and plaids. Gingham of a good grade holds its color when washed and does not rumple like dimity and lawn.

Long cloth, muslin, and nainsook are described in the section on Cotton Materials Commonly Used for Underwear.

HOME PROBLEMS AND QUESTIONS

See if you can find pieces of dimity, lawn, and gingham in the scrap-bag at home. Bring these to school to use in your Textile Book. Bring to school a sample of the material you expect to purchase to use in making the protection square. What is the price of the material? What is the width?

LABORATORY EXERCISES

MAKING THE PROTECTION SQUARE

Textile study: Examine the samples of dimity, lawn, and gingham brought to school. Discuss quality of each. From the samples brought from the stores, decide on two or three pieces that may be used for the protection square. Which will launder best?

A square piece of wash material will be used in making the protection square. If a piece of material 36 inches wide is used, how long should the piece be? How long, if the material is 27 inches wide? How much will the square of material cost?

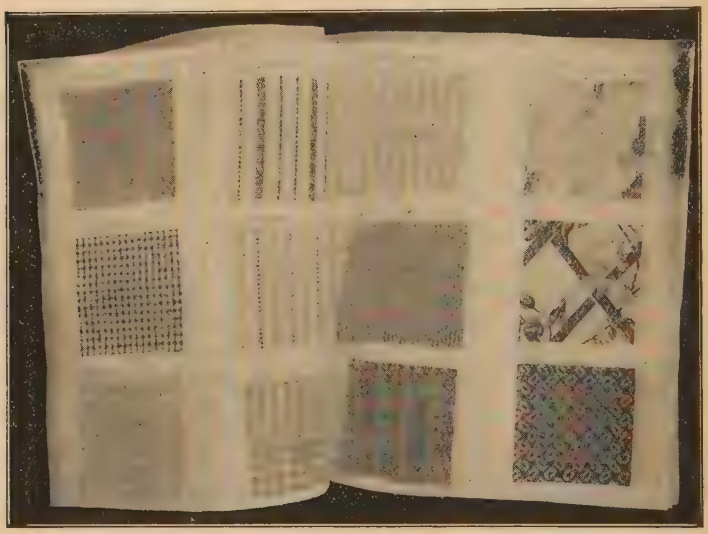
Perhaps you can find some partially worn material at home that could be used for this protection square. The material should not be heavy or stiff. What kind of material is it?

Make a Textile Book by using white sheets of paper for the leaves and a colored or brown-paper cover. Decorate the cover as desired. Cut the lawn, dimity, and gingham samples equal in size. Paste each in the book by one edge, so that the samples can be examined on both sides. Under each sample place the name of the material. As other materials are studied they can be added to the book.

Making the protection square: Straighten both ends of the material. This is done by pulling out a crosswise thread and cutting on the open line left after drawing out the thread. Always pull out a thread that extends clear across the cloth.

Across each end, turn a hem one half inch wide; baste the hem, being careful to keep the stitches far enough from the fold to avoid stitching across them in sewing the hem. Be sure that the selvedge edges are together evenly at the ends of the hem. Stitch on the machine. The ends of such a hem may be strengthened by beginning the stitching one inch from the end, stitching towards the selvedge of the material, then turning the material and, without breaking the thread, stitching back over the first

stitching, across the hem to the other selvedge; then turning the material and stitching back one inch from the selvedge over the first row of stitching. Pull the top



PAGES IN THE TEXTILE BOOK
SHOWING SAMPLES OF COTTON MATERIALS

thread through to the wrong side and tie the two threads in a knot; then cut off ends. Remove basting. The hems will look better finished if they are pressed.

REVIEW QUESTIONS

1. How should the protection square be used?
2. Describe lawn. For what purposes is it used?
3. Describe dimity.
4. What is barred dimity?
5. Do dimity and lawn launder well?
6. Does gingham launder well?
7. Which of the three materials rumples least?
8. How is a hem made? For what is it used?
9. For what is basting used?

A PIECE OF CLOTH

Cloth is a fabric woven of cotton, linen, wool, or silk. The lengthwise threads in the cloth are called the "warp." The crosswise threads are called the "woof" or filling. The warp is the stronger set of threads. The "selvedge" of cloth is the finished lengthwise edge. It is firmer and more tightly woven than the rest of the cloth, and in wash material is apt to draw up after the cloth is laundered. For this reason it is usually cut from wash material when making a garment, and when not removed is clipped crosswise every few inches to keep it from drawing the edge of the cloth.

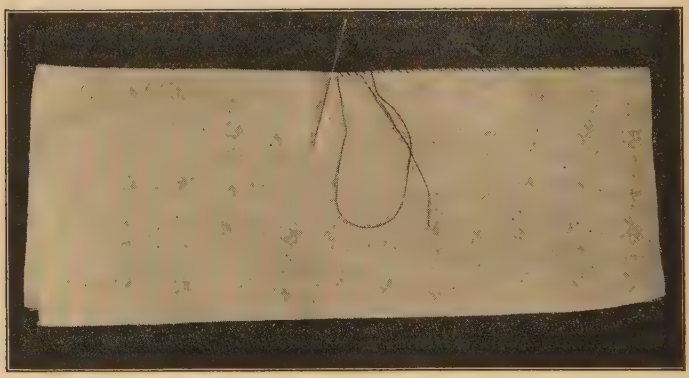
"Nap" is the shaggy substance on the surface of cloth and varies with the different kinds of cloth and the kind of fiber used. The fiber is the substance from which the yarns are spun which are woven into cloth. The four principal fibers used for making yarns are: (1) cotton, obtained from the seed pod of the cotton plant; (2) linen, obtained from the stems of the flax plant; (3) wool, obtained mainly from the fleece of sheep; and (4) silk, obtained from the cocoon of the silkworm.

"Spinning" is the twisting together of fiber to form yarns. "Weaving" is the process of interlacing two sets of yarns together so that they form cloth. Perhaps you have made paper mats by weaving. The machine on which the weaving of cloth is done is called the "loom." Spinning and weaving were done in the home by our grandmothers, who made the cloth used by the family, but now fabrics used for clothing and household textiles are made in the factory. Very fine machinery is used, and every piece of cloth that we buy has gone through numerous processes in the factory before it is sold in the store.

LABORATORY EXERCISES

MAKING A PINCUSHION

Textile study: Examine samples of cotton cloth. Pull out both warp and woof threads. Is there a difference in the size? Which is the more difficult to break? Pull the yarn in pieces. What is left? Examine the selvedge. Tear a piece of gingham. What happens to the edge? Would it be best to tear or cut the edge that is to be hemmed?



METHOD OF PLACING NEEDLE IN OVERHANDING TWO SELVEDGES OR FOLDED EDGES TOGETHER

Overhanding: This stitch will be used in making the pincushion. Overhanding is used in sewing together two selvedge edges or two creased folds of cloth. It consists of tiny, slanting stitches taken over the two edges, beginning at the right and sewing toward the left.

Making the pincushion: Use thin wool material, such as wool challis, albatross, cashmere, baby flannel, Henrietta cloth, or wool jersey, for the covering on the pincushion. Perhaps you can find a piece of suitable material in the scrap-bag at home. Use a piece of material 4 inches by 7 inches in size. Measure after the edges are straightened.

Turn the raw edges of the material towards the wrong side, one fourth inch. Hold the fold in place by basting

with one fourth inch stitches, one eighth inch from the fold. Be careful to make square corners. Press the fold, using a slightly damp cotton cloth over the wrong side of the material, ironing the damp cloth until dry.

Fold the piece of cloth so that the raw edges are on the inside and the two ends are together. Baste the two ends together, making the basting stitches one eighth inch from the folded edges. Be sure that the corners are even. Baste one of the folded sides together, being careful to tuck inside all raw edges at the corner.

Overhand together this folded side, then the ends. Use silk thread. Remove the basting across the ends and the folded side that was overhanded together. Be careful to make the corners square.

Fill the pincushion with wool, if possible, packing it in evenly. Baste the opening together and overhand. Remove bastings.

Where can you obtain wool to use in filling the pincushion? Have you ever seen your mother making a comfort with a wool filling? In what form does she buy this filling at the store?

Why is it better to use wool material, rather than cotton or linen, for covering the pincushion?

COTTON "BED LINEN"

We call the sheets and pillowcases used in making a bed "bed linen", because sheets and pillowcases were originally made of linen instead of cotton. Linen sheets and pillowcases are still made, but are very expensive, and for this reason cotton is now more commonly used.

Sheets may be bought ready-made, or the material, called "sheeting", may be bought by the yard and the sheets made at home. The home-made sheets are not much cheaper, but are often of better quality than the ready-made sheets.

There are many grades of sheeting, the unbleached sheeting being the cheapest, and percale sheeting the best. Ready-made sheets come in several sizes. A sheet should be 24 inches wider than the bed and from 24 to 36 inches longer than the bed. The width of a sheet is sometimes indicated in "quarters", a "quarter" being nine inches; thus a sheeting 54 inches wide would be 6 quarters in width. Good widths to buy are: for single beds, 6 or 7 quarters; for three-quarter beds, 8 quarters; for double beds, 10 quarters.

Sheeting should be torn when making a sheet, because it will then iron straight after it has been laundered. Hems of equal size should be used on the two ends, so that the wear on the sheet will be more even than when finished with a wide hem at the top and a narrow one at the bottom. For everyday use, sheets finished with plain hems are the best. For the "best" sheets, the hems may be hemstitched or finished with embroidered scallops or with insertion or lace.

There should be at least three sheets for each bed, and it is better to have four. At least two pillowcases for each pillow are needed in the linen outfit, and to have three for each pillow is better.

Pillowcases are made from pillow tubing or from the flat piece of cloth. Pillow tubing is woven in tubular shape, so that the pillowcase can be made without a seam up the side. Pillow tubing comes in different widths, the measurement usually being taken around the tube, although sometimes indicated by half the width. Pillowcases may be bought ready-made, but the home-made ones are often of better quality.

Pillowcases should fit snugly, but the pillow should not be pinched by the case. It is desirable to have the case about six inches longer than the pillow. Hems should be about two inches wide on the open end of the

pillowcase, and may be finished with a plain hem, hemstitched, scalloped, or decorated with narrow lace or insertion.

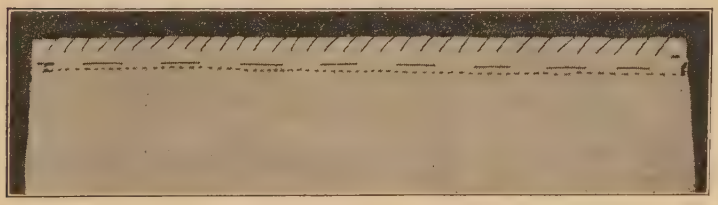
LABORATORY EXERCISES

MAKING A PILLOWCASE

Textile study: Examine samples of sheeting and pillow tubing. What is the price per yard of good sheeting 8 quarters wide? Ten quarters? How much sheeting would you need to buy to make a sheet of the correct size for your bed at home? What would be the cost of the sheet?

What width pillow tubing would you need for making the cases for the pillows on your bed? Perhaps your mother will allow you to make a pair for your bed.

Making a pillowcase: Use pillow tubing. Sew one end of the tubing together with a French seam (see directions below), made by machine. Finish the other end with a two-inch hem, made by hand.

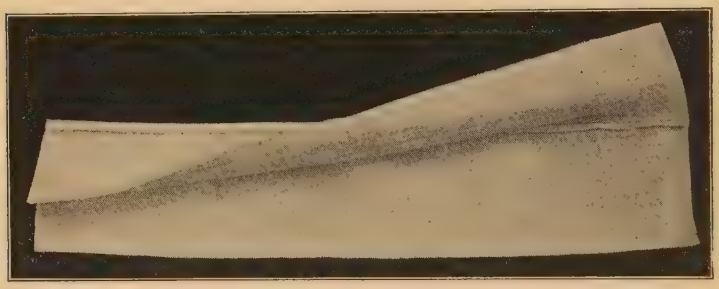


STEPS IN MAKING A PLAIN SEAM

A plain seam is made by joining two raw edges with a row of stitching, the stitching being done the desired distance from the edge of the cloth. The raw edges are afterwards trimmed and overcast. Overcasting is much like overhanding, except that the stitches are deeper and farther apart and the work is done from left to right. It is used to keep edges from raveling. A plain seam is used in making dresses and aprons.

A French seam is a seam so made that the raw edge of the

cloth is covered. Make a very narrow plain seam on the right side of the material, remove the bastings, trim the ravelings from the edge, crease the cloth along the stitching so that the right sides of the cloth are together, baste, and stitch through



MACHINE-MADE FRENCH SEAM
SHOWING FIRST AND FINISHED SEAMS

the two thicknesses of cloth just below the raw edge inside the seam. A French seam is used in making underwear, lingerie, dresses, waists, and pillowcases.

REVIEW QUESTIONS

1. Of what material is a sheet made?
2. What is the correct width for a sheet to be used on a single bed? On a three-quarter width bed? On a double bed?
3. Why is it more convenient to use pillow tubing instead of a flat piece of material for making a pillowcase?
4. In what widths may pillow tubing be purchased in the local stores?
5. From your examination of the samples of sheetings, what would you consider the important points to be observed when selecting sheeting or pillow tubing?
6. If beds are of different sizes, how may the sheets that fit each bed be marked so that they can be easily sorted after laundering?
7. Discuss the plans for a linen closet. Where should it be placed in the house plan? How wide should the shelves be? Should there be drawers as well as shelves?
8. What other articles besides sheets and pillowcases may be kept in the linen closet?

THE GIRL'S BEDROOM

One of the Health Rules is to have plenty of sleep each night in a well-ventilated room, or out-of-doors. A bedroom should have plenty of windows, and one with windows on two or three sides is the best. When there are windows on only one side, a group (battery) of two or three windows is a desirable arrangement. The windows should be screened during warm weather.

The floors, walls, and woodwork should be so finished that they can be easily cleaned. Hardwood floors, waxed and polished, are desirable in a bedroom. In an old house, where the floors are of softwood, they may be finished with two or three coats of floor paint.

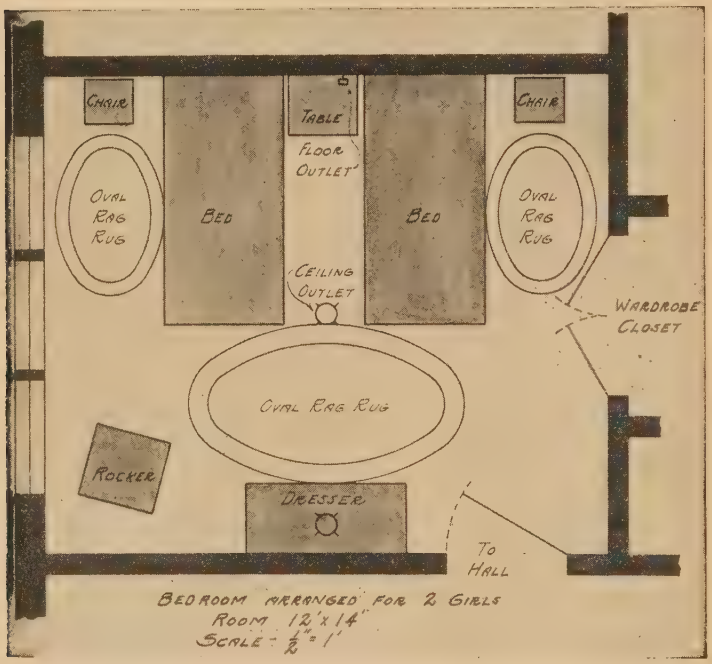
The woodwork may be of hardwood or of softwood. Hardwood with a rubbed finish is better than a finish of glossy varnish. Painted wood makes an attractive woodwork for a girl's bedroom. (See section on The Kitchen.)

The walls of a bedroom in a new house are often finished with oil paint. (See section on The Kitchen.) This is better than finishing them with water-color paint, such as kalsomine. Walls in the bedroom may be papered, but they are not easily cleaned when finished by this method.

A girl's bedroom is most attractive when the walls and woodwork are light in color. If the room has plenty of windows and good light and sunlight, cool colors — such as light values of green, lavender, gray, and tan — may be used on the walls. If the room is on the north side of the house, or if it has but little light, warm colors — such as yellows in different values, tans, buffs, or other colors with orange or yellow in them — may be used.

Wall papers with a white or cream background and

small conventionalized floral patterns are attractive in a girl's bedroom. Striped papers, with narrow or pin stripes, and not too great contrast in the colors of the



A Floor Plan of a Bedroom, Showing a Battery of Windows

A wardrobe closet is built between two walls of adjoining rooms. The twin beds and other furniture are well placed. Note the light above the dresser and the floor outlet to which may be attached a lamp or the vacuum cleaner. The center lamp is at the ceiling where it furnishes the best general illumination for the room

stripes, are good to use in a room when the ceiling is low. In such a room the striped paper should extend up to the angle made by the wall and the ceiling; never use wide borders or carry the color of the ceiling down on to the wall (called a drop ceiling) in a room with a low ceiling.

Wide borders, perhaps with a picture molding below, and drop ceilings may be used in rooms with very high ceilings when it seems desirable to make them seem lower in order to have the rooms appear in good proportion. The woodwork is most artistic when it is not much darker or much lighter in color than the walls. White woodwork looks well in a bedroom where a wall paper has a white background, or in rooms where the walls are painted with light values of green, lavender, gray, or blue. With wall paper having an ivory background, or when tans, buffs, or yellows in different values are used on the walls, the woodwork should be ivory or cream in color instead of white. In some bedrooms the walls and woodwork are painted the same color, a good plan to follow when the woodwork is poor in design, or when the work is being done in an old house.

A bedroom should be large enough so that the large pieces of furniture may be placed straight against the wall, in positions where the lighting is correct, and so that there is plenty of floor space between the furniture to permit walking about conveniently. It is better to plan a place for the bed where it may stand with both sides away from the walls.

The closet in the best-designed bedroom is between the walls of two rooms, thus keeping the walls of the rooms straight. In some plans the closet is made by walling up a space in one corner of the bedroom, thereby spoiling the shape of the room, which is undesirable. A closet should be deep enough to permit hangers to swing across the depth of the closet without touching the walls or the door. Shelves and drawers in a closet are convenient. There should be plenty of space in the closet, and a long mirror in the door is very useful.

HOME PROBLEMS AND QUESTIONS

From magazines and newspapers cut house-plans in which you think the bedrooms are well arranged, and mount them on stiff paper.

Study these and answer the following questions:

1. Which bedrooms have windows on two or three sides?
2. Which bedrooms have batteries of windows?
3. In which plans are the closets well arranged?
4. Which is the largest bedroom in the house?
5. In the plans for bungalows, are the bedrooms disconnected by a hallway from the living or dining rooms? This is considered a desirable arrangement.
6. Are there bathrooms connected with any of the bedrooms?
7. If there is only one bathroom in the house, can it be reached conveniently from every bedroom?

Ask the art teacher to talk to the girls about Wall Decoration. What sort of design is a "conventionalized design"? Ask the art teacher why such a design is considered the best to use on walls. Why are large designs undesirable in a small or medium-sized room?

LABORATORY EXERCISES

LAUNDRY BAG

Materials: Use cretonne, unbleached muslin, or other firmly woven wash material. What should be the size of the bag? How much material will be required to make a bag of this size? Use linen tape three quarters inch wide for the drawstring. How much tape will be needed?

Making the laundry bag: Straighten the ends of the material. Baste a casing (hem) across one end, one inch wide when

finished; stitch on machine. Fold the two selvedge edges together with the right side of the material inside. Make a plain seam, one fourth inch deep, along the selvedge, using the machine, finishing the seam just below the hem. This seam does not need overcasting; why? How should the seam be finished to make it secure at the casing?

Turn the bag right side out and make a French seam by machine across the bottom of the bag.

Remove all bastings. Run the tape through the casing on the bag. Cut the ends of the tape straight; fold each end down one-fourth inch, and lap them over each other with the raw edges inside, so that the join will be flat and the tape straight. Hem down by hand across each fold of the tape and overhand the edges together so that no raw edges can be seen. Fasten securely. Pull this join inside the casing so that it does not show.

Where should the laundry bag be hung in your room? How often should it be laundered?

COTTON MATERIAL COMMONLY USED FOR UNDERWEAR

White cotton materials commonly used for making underwear are muslin, long cloth, cambric, and nainsook. Cotton crêpe and dimity are sometimes used.

Muslin is a soft cotton fabric that is 36 inches wide. The muslin we use for underclothing is bleached and is a clear white. Sometimes unbleached muslins are used for sheets or pillowcases. An unbleached muslin is cream-colored and is not so well finished as the bleached muslin. It is cheaper in price because it takes less time and work to finish this cloth than the bleached muslin.

Most factory-made cloth is given a brand name that can be found stamped on the cloth, or on a label pasted on the outside of the bolt, or on the wrappings of the bolt. The quality of muslin is often known by a brand

name. Alpine Rose is a fine quality of muslin suitable for underwear.

Long cloth is a cotton fabric which is much like muslin, but softer and finer. It is 36 to 42 inches wide and comes in different qualities. It is called long cloth because it was first used in making long dresses for babies.

Cambric is a cloth with a smooth glossy finish. It is like muslin or long cloth, but can be distinguished by its gloss. It is 36 inches in width. Berkeley cambric is one grade that is very good for underwear. Lonsdale cambric is another grade often used.

Nainsook is a very soft, light-weight material which comes in different qualities, varying in price. It varies in width from 36 to 45 inches. The finer grades are beautifully finished and are used for infants' clothes. Nainsook does not wear so well as muslin or long cloth, when made into underwear, but is much used for finer garments.

Cotton crêpe is a soft, crinkled material that does not need to be ironed after washing. It is often used for underwear for this reason. It is 27 to 44 inches in width and comes in different grades. In selecting cotton crêpe for underwear, buy the kinds that are the softest and that do not feel harsh when crushed in the hand.

Cross-barred and *other dimities*, and other novelty materials made of cotton, often in colors, are used for underclothing. "Novelty" materials are those sold for one or two seasons, after which they are not found in the stores because the manufacturer has made other materials which take their places. "Standard" materials are those which can always be found in the stores. Thin materials and often the novelty materials do not wear so well as long cloth, muslin, or cambric, but make underwear that is dainty and attractive in appearance.

When buying muslin, long cloth, cambric, or nainsook, it is more economical to purchase it by the bolt than by the yard.

HOME PROBLEMS AND QUESTIONS

Collect samples of muslins, long cloth, cambric, nainsook, cotton crêpe, and other cotton materials that are suitable for underwear. Which are novelty materials? Which are standard materials? Some will find what others cannot get, and by dividing samples each girl can have all in her sample book. What is the price of each material? What is the price of a twelve-yard bolt of long cloth?

See if you can find any one who can tell you about the spinning and weaving done by our grandmothers. Perhaps you can find something in the library about the making of cloth in early times. Write a story about "The Making of Cloth in Early Times" to read in class and to put in your Textile Book.

LABORATORY EXERCISES

PLANNING THE NIGHTGOWN OR PAJAMAS

Textile study: Examine samples of long cloth, muslin, and nainsook. Does the quality differ? Which are the best ones to use for underwear? Examine samples of novelty materials suitable for underwear, and decide on those which might be used for the best underwear. Which materials would be best to use for everyday underwear?

The pattern to use for the nightgown or pajamas: Mount on cards, or sheets of paper, pictures showing nightgowns or pajamas of different patterns. Examine these and decide which would be the easiest to make. The class will make a one-piece kimono nightgown, or pajamas with a coat having kimono sleeves. Can you tell why these styles are

selected? The pattern should be purchased at the store, and will be bought according to the size of the girl to wear the garment. If you will look in the pattern sheet or book you will see how the sizes for a girl's nightgown or pajamas are shown. What sizes are needed for the class?

Materials needed for the nightgown: Use long cloth of good grade for the nightgown. To determine the amount needed, measure from the top of the shoulder next to the neck down to the floor, and add three inches to this length. Multiply this by 2. (If the teacher will buy the material by the bolt and sell it to the children, it can be obtained much cheaper.) Be sure to select long cloth 36 inches in width, as this avoids piecing the sleeves and is not so wide that a strip down the side is wasted. Use Nos. 80 and 90 thread with Nos. 8 and 9 needles. Basting thread may be used.

Materials needed for the pajamas: Use a colored novelty material, if desired. Select a pattern having a coat with kimono sleeves, cut to slip over the head and without shoulder seams. How much material is needed for the pajamas? What kind of thread should be used?

REVIEW QUESTIONS

1. Name white cotton materials that are used for making underwear.
2. How can you tell muslin, long cloth, and cambric apart?
3. What is unbleached muslin?
4. What does cotton crêpe look like?
5. Is dimity a good material to use for underwear? Why?
6. For what kind of underwear is it best to use nainsook?
7. What is the most economical way to buy long cloth or other underwear material?
8. Explain how the amount of material needed for the nightgown should be determined.
9. How are sizes for girls' nightgowns given in the pattern sheets? For pajamas?
10. How is the size of the thread needed for making the nightgown determined?
11. What is a standard material? A novelty material?

12. Why is it necessary to read the directions with the pattern before cutting a garment?

13. Name different makes of patterns that can be purchased at the stores.

FURNISHINGS FOR THE GIRL'S BEDROOM

The furnishings in a girl's bedroom should be practical, yet dainty in appearance. It is not necessary to use expensive furnishings to make a room attractive,

AN ATTRACTIVE BEDROOM WITH A PAINTED WOODEN BED

A DRESSING TABLE, A BEDSIDE TABLE; THE EASY CHAIR AND THE "PIE-CRUST" TABLE FURNISH AN INVITING PLACE TO READ. THERE IS A HOOKED RUG ON THE FLOOR. RUFFLED CURTAINS, TIED BACK, ARE APPROPRIATE IN THIS ROOM

but it does take skill and a knowledge of art principles to be able to combine and use materials, colors, furniture, and bric-a-brac to make an artistic room.

Window draperies for a bedroom may be made of wash materials if the room is simply furnished; in more elaborate rooms sometimes silks are used, but such materials are not easily cleaned. Curtains of scrim, curtain muslin, marquisette, or cheesecloth, finished with plain hems, are practical to use in a girl's

bedroom. They should hang straight and may be pushed apart when desired. Swiss curtains finished with narrow ruffles, tied back, are often used, but such curtains are not so easily ironed as those finished with plain hems. Cretonnes and chintzes may be used when overdraperies are desired, or these materials may be used alone. When used alone, cretonne or chintz curtains should hang straight at the sides of the window and may or may not have a valance across the top. Cretonne and chintz for this purpose must be of good quality, since poor qualities fade in the sun and in laundering. These materials should always be laundered very carefully.

When the walls and woodwork are ivory, cream, or brown in color, the glass curtains (those next to the glass) should be ivory or cream in color; when the background of the wall paper is white and the woodwork white, the glass curtains should be white.

Cretonne and chintz, or other figured materials, are best used with painted walls or those finished with a paper without design. If a color scheme is to be carried out in the room, curtains may emphasize the color. If, for example, you wish a yellow bedroom, a good plan to follow would be to have a cream-colored wall, overdraperies decorated in yellows and harmonizing colors, rag rugs designed in yellow and the same harmonizing colors used in the draperies, while the furniture may be painted the color of woodwork or walls and decorated with designs in bright yellow and the same harmonizing colors that are used in the draperies. Perhaps there will be a cushion needed on a window seat or in a chair, and this can be made of the same material as that used for the draperies.

Rag rugs, either woven or braided, are a good selection for the bedroom. Rugs should be placed straight on the floor, in front of a dresser or dressing-table, at the

sides of the bed, in doorways, or wherever there will be much wear on the floor. Linen rugs, sold under trade names, can be used in place of rag rugs, but are not so dainty in appearance for a girl's room. Hooked rugs and crocheted or knitted rag rugs are sometimes selected for bedrooms, but are not so easily cleaned as the braided or woven rag rug.

LABORATORY EXERCISES

MAKING THE NIGHTGOWN OR PAJAMAS

Cutting out the nightgown: Read the description of the pattern given on the envelope. Open the pattern. Study all the groups and rows of different dots, notches, etc., and find what each one means. Does the pattern allow for the seams? Measure from the shoulder at the neck of your pattern to the bottom of the pattern. Is the pattern the right length according to the measurements you made when planning the amount of long cloth needed? If it is too long, turn up the extra length at the bottom; if too short, allow the extra length when cutting the gown.

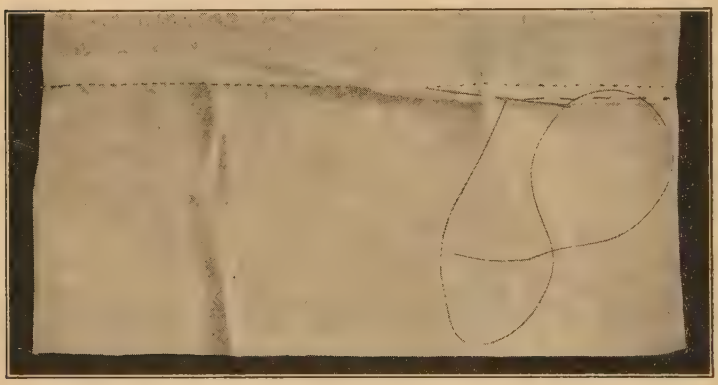
Follow directions for laying the pattern on the material given on the direction-sheet. Pin securely to cloth. Make an allowance for extra length if needed. How will you do this? Cut out carefully, making all notches in the cloth that are indicated in the pattern. Remove the pattern from the cloth, fold it carefully and put it back in the envelope. Where should the pins be put? Fold together the pieces of cloth that are left and place them in your sewing-box.

Cutting out the pajamas: Follow the directions that are given for the nightgown. To find the correct length for the pajamas, measure from the waist down to the ankles, then measure the pattern to see whether the length is correct. To make the pajamas longer, add half of the required additional length at the waistline and half to the bottom of the legs. Be sure that the coat is loose across the chest

and back. How can you test the pattern to determine this? If long sleeves are to be made, is the pattern the correct length?

Making the nightgown: Make French seams in the gown, sewing them on the machine.

Making the pajamas: Make French seams in the legs of the pajamas. To join the two legs, follow directions given on pattern about matching the notches or other markings. Sew together with a felled seam; stitch by machine.



Method of Making a Felled Seam

To make a felled seam: Make a plain seam one ~~fourth~~ inch wide, but do not overcast the edge. Cut off one side of the seam one eighth inch. Fold the wide side down one eighth inch and over the narrow side of the seam. Lay both sides of the seam flat on the cloth with the narrow side under the wider side. Baste to the cloth. This seam may either be hemmed by hand along the fold, or it may be stitched by machine.

FURNISHINGS FOR THE GIRL'S BEDROOM

(*Continued*)

The bed is the most important piece of furniture in the girl's bedroom, because it is estimated that we

spend one third of each twenty-four hours in bed. Enameled iron and painted wood beds are attractive in a girl's room. If two people occupy the same bedroom, it is desirable to use twin beds. When a painted wood bed is used, the dresser or dressing table, a desk, and other large pieces of furniture are usually decorated in the same manner. Wicker or reed fiber chairs are suitable for bedrooms, or painted chairs to match the other painted furniture may be used. When selecting an enameled iron bed, it is best to select an ivory-colored one if the walls and woodwork are other than white. The best enameled iron bed is designed with straight lines, and is never decorated with curved rods or brass or colored knobs.

A Well Designed Dresser

Note the adjustable mirror. The dresser stands high enough to make it easy to clean the floor underneath

Dimity spreads are practical to use on the bed because they are easily laundered. Marseilles spreads are hard to launder. Fancy spreads of various kinds are often used, but are not so easily laundered as the dimity spreads. A bed is comfortable when it has a good set of bed springs and a good mattress, and bedding that is long and wide enough and of the correct

weight. Spiral bed springs in a firmly finished frame are a good selection. Felt mattresses of good grade are very generally used because they are lighter in weight than a hair mattress and are soft. A mattress should be protected with a mattress pad, which can be purchased in the correct size to cover the top of the

Wicker or Reed Chairs of This Type Are Suitable to Use in a Bedroom

mattress; or a partially worn quilt may be used in place of the pad. Blankets, preferably wool, are better to use for warmth than cotton or wool comforts, because they can be more easily laundered. If a comfort is used, the covering should be of a wash material instead of wool or silk. "Puffs" are filled with down and are sometimes covered with silk, because they are used as "extra" cover and are too expensive to use on a bed all of the time. If a bed is to be sanitary, it must be aired thoroughly every day and the bedding must be kept very clean. A bedroom never looks in order unless the bed is neatly made.

All the large pieces of bedroom furniture should be placed straight with the lines of the room, never across corners. The dresser or dressing-table should be placed so that the light from a window falls directly on the face of the person in front of the mirror. Artificial light is best when a light fixture drops from the ceiling above

TWIN BEDS WITH DIMITY SPREADS AND PILLOW SHAMS, SUITABLE FOR EVERY DAY

APPLIQUÉ OR PIECED QUILTS LOOK WELL ON COLONIAL BEDS LIKE THESE, BUT ARE HARDER TO LAUNDER THAN DIMITY SPREADS

the dresser or dressing-table. The bed should be placed so that the occupant does not face the light from a window or door. A room is well arranged when balanced; this is usually done by placing the large pieces on opposite sides of the room rather than all on one side of the room.

Only a few pictures and little bric-a-brac should be used in the bedroom. If the walls are covered with a

floral design, pictures do not look well on them. Only the necessary toilet articles should be on top of the dressing-table or dresser, and boxes of powder, bottles of toilet water, nail polish, or similar articles should be put away on shelves or in drawers. Photographs of one's friends may be used in the bedroom, but the top

A "Four-poster" Bed, Well Placed

The oval rug is correctly laid by the bed. The ruffled curtains are edged with a contrasting material which adds a touch of color to the room. Note the view into the bathroom which has a tiled floor, a pedestal washstand, and a built-in bath-tub

of the dresser is not the place for them. Such pictures may be framed and hung in a group above the desk or table, or two or three may be placed on the table or desk, putting others away to replace these later.

The girl's bedroom is never attractive unless kept in order. Clothes must be put away in an orderly way, the dresser carefully arranged, the bed neatly made, and the room kept very clean.

HOME PROBLEMS AND QUESTIONS

From furniture catalogues or magazines select pictures of furniture which you think suitable for a girl's bedroom. Discuss styles suitable for your father's and mother's room; your brother's room.

Select pictures of bedroom interiors which you think attractive. Discuss these in class.

If you could arrange your bedroom at home in just the way you would like, how would you change the present furnishings? Make a floor plan of your room, showing where each door and window is placed; place the furniture in the floor plan, making each piece the right size. Write a description of the furnishings you would like in the room and bring to class for discussion.

Discuss the best methods for cleaning the bedroom. How should the bed be arranged for airing each morning?

How should cretonne curtains be laundered? Discuss the correct method for laundering blankets. How should blankets be stored when not in use?

If you had some old furniture which had been stained and varnished, what process should be followed in refinishing it with paint?

LABORATORY EXERCISES

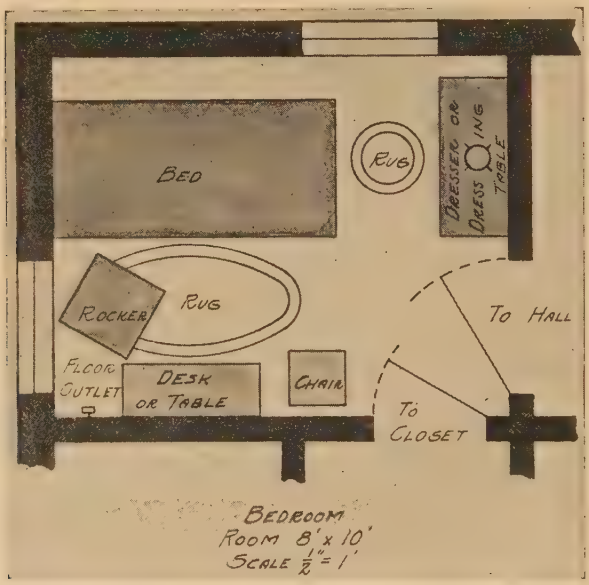
MAKING THE NIGHTGOWN OR PAJAMAS (*Continued*)

To make the hems on the gown: The bottom of the gown is to be finished with a three-inch hem. Make a guide, or gauge, to use in turning the hem; baste and stitch on the machine. On the bottom of the sleeves make a one-eighth-inch hem. Baste and hem by hand.

Try on the gown to see if the neck is the size you wish. If not, trim it around the edges. Turn a one-eighth-inch hem around the neck; baste and hem by hand. This hem

is harder to make because the neck is curved, and in order to do it well the hem must be basted very carefully with one-eighth-inch basting-stitches. Remove all bastings.

To finish the trousers of the pajamas: Finish the ends of the pajama legs with hems three-fourths inch wide; stitch by



A Bedroom Arranged for One Person

Note that the bed is placed away from the corner of the room, is straight with the lines of the room and that the occupant does not face the light. There is no center light fixture because the room is so small that the drop light above the dresser furnishes enough illumination. The floor outlet may be used for a lamp on the table or for a reading lamp on the head of the bed

machine. Make a hem three-fourths inch in width around the top of the trousers, to be used as a "casing." Stitch by machine. Leave a one-inch opening, made by stopping the stitching one inch from the point where the stitching was begun; this is the opening through which the elastic can be run into the casing.

Use elastic one-half inch wide. Take the waist measure, being sure to make the fit snug but never tight; use a piece of elastic this length plus one inch. Run the elastic into the casing, being sure to keep it flat without any twists. Join the two ends of the elastic by lapping the ends one-half inch, overhanding the edges together and hemming down the raw ends. You cannot turn the ends in as you did when joining the tape. Why?

After joining the elastic, close the opening left in the hem by hemming it by hand. It is easier to rip hemming done by hand than by machine when it is necessary to open the casing to put in a new elastic.

REVIEW QUESTIONS

1. What materials are suitable to use for curtains in a bedroom?
2. Discuss methods of hanging curtains.
3. How would you determine the amount of material needed for a pair of curtains?
4. What kind of rugs are suitable in a bedroom?
5. How should rugs be arranged in a bedroom?
6. What kinds of beds are suitable for a girl's bedroom?
7. Why should twin beds be used in a room occupied by two people?
8. What is the price of a good felt mattress to be used on a single bed? What is the price of a set of spiral bed-springs for a single bed?
9. What kind of chairs are suitable in a bedroom?
10. Why is it desirable to have light-colored walls in a bedroom?

FACTS ABOUT LACE

Lace is often used for decorating underwear. When the right kind is selected it makes a very dainty finish. The lace used with muslin, long cloth, or cambric should be heavier than that used with nainsook, because the weight of the material is different. There are several kinds of lace that may be used for underwear, and in order to select it wisely one must know (1) the names of the different kinds, (2) the price that must be paid

for a good quality, and (3) the points that should be watched in choosing a design that will launder and wear well.

All lace was originally made by hand, and was very expensive. Now a large part of the lace which we use

Lace Edgings of Good Design

is made by machine and is much cheaper than the hand-made lace. The machine lace is made in the same patterns as the hand-made lace, and the better grades are very pretty. The kinds of machine-made lace commonly used for underwear are:

1. Valenciennes of two kinds: German, which has a round mesh, and French, which has a diamond-shaped

mesh. Valenciennes laces are suitable to use on nainsook or dimity underwear, on long cloth, or on crêpe. Valenciennes lace is made from cotton thread.

2. Torchon lace is made from linen thread and sometimes from cotton. The cotton torchon is cheap in appearance and does not look so well as the linen after it is laundered. Torchon laces are heavier than Valenciennes laces and are suitable to use on muslin, long cloth, or cambric underwear.

3. Cluny lace is a heavier lace than torchon. Some kinds are very heavy and not suitable for underwear, but are used as a finish on such articles as doilies, curtains, or dresser-covers. Cluny laces of the finer kinds may be used on muslin or cambric.

4. Irish lace is a heavy lace, suitable only for long cloth, cambric, or muslin underwear. It is sometimes used with thin materials in making waists or dresses. Perhaps you have seen some one crocheting Irish lace. When fine thread is used, and the work is well done, it is a very pretty lace to use.

5. Filet is another lace sometimes used on underwear. It is a square-mesh lace, which means that the openings between the framework of the lace are square. It comes in both heavy- and light-weight varieties, and makes a dainty finish on long cloth, nainsook, or dimity. Filet is another lace often crocheted by women to-day, but most of the lace thus made is too coarse to look well on underwear.

HOME PROBLEMS AND QUESTIONS

Bring to school any samples of lace you can find at home. Look at the picture of the laces and see how many you can recognize.

LABORATORY EXERCISES

MAKING THE NIGHTGOWN OR PAJAMAS (*Continued*)

Textile study: Have several samples of linen, torchon, and Valenciennes lace edging, and of linen and cotton beadings to examine, and let each girl select the piece she likes best for her gown. State why the piece was selected. From these selections, choose the best pieces to use for the gowns. What is the price per yard of each?

The amount of lace needed for the gown: Measure around the bottom of one sleeve and add to this measure four inches. How much will be needed for the two sleeves? Measure around the neck of the gown and add two inches. How much lace will be needed for the neck and sleeves? Add to this amount four inches which you will use in learning to join lace.

Beading is to be used around the neck of the gown. How much will be needed? Add four inches to this amount. Purchase lace edging and beading so that it will be ready to use in class for the next lesson. Be sure that the lace comes in one piece, and that it is not pinned together where two ends are joined on the bolt. Continue work on the nightgown.

Finishing neck on pajama coat: There are several methods that can be used. One of these is the fitted facing applied to the right side of the garment. Cut a shaped facing which just fits the neck and front opening of the garment. There may be a pattern for such a facing with the pajama pattern that you are using. If not, lay the coat pattern open flat on top of a piece of brown paper on a tracing-board (one on which a tracing-wheel may be used). With a tracing-wheel, outline on the paper the shape of the neck and opening; remove pattern.

Cut the paper on the traced line. With a yardstick measure $2\frac{1}{2}$ inches out from the line to get the width of facing; mark with a pencil, being sure to measure often

enough to make the facing even; draw a line connecting the dots; cut the paper on this line, and you will have a pattern for a fitted facing.

Cut the facing from the material, being sure that the center front of the facing is on the straight of the material. A material of a different color than the coat may be used for this facing if desired.

The Pattern for the Facing and the Method of Pinning it to the Material

Pin the facing to the neck of the pajama coat with the *right* side of the facing against the *wrong* side of the coat. Baste into place. Use the running-stitch (made by hand) to fasten the facing to the coat; make this stitching three sixteenths of an inch from the edge of the neck and run it to a point at the bottom of the opening in the front of the coat.

Turn the facing so that the seam is inside and the facing on the right side of the coat. Fold the edge of the facing down one-fourth inch towards the wrong side; baste very carefully, because this edge can be easily stretched and when stretched will not fit the coat. Be sure to measure this fold very carefully, so that the facing will be even in width.

Around the neck of the coat crease the facing down evenly and baste down to the coat. Then baste the folded edge of the facing down to the coat. It will be necessary

to trim the inside seam at the bottom of the opening in front, in order to make a neat finish. Stitch the facing to the coat one-eighth inch from the folded edge, stitching very straight. You may stitch around the neck and down the opening if desired. Instead of finishing the folded edge of the facing with machine stitching, it may be fastened to the coat with featherstitching (see p. 336).

Another method of finishing the neck of the coat is with a narrow facing turned on to the wrong side of the coat. How would the method for putting this facing on differ from the one applied to the right side of the garment? Bias binding may be used for this narrow facing (see method 2 given on p. 416). In what form is bias tape or binding purchased at the store? Have you ever seen it used for any purpose other than for a facing?

Completing the pajama coat: Use French seams made by machine to sew together the sleeves and sides of the coat. These seams should be about three sixteenths of an inch wide when finished. Baste a hem three-fourths inch wide around the bottom of the coat. Stitch by machine.

The bottom of the sleeves may be finished with a one-half-inch hem, stitched by machine. When material of a different kind from that of which the coat is made has been used for a facing around the neck on the right side of the coat, the sleeves may be finished with a similar facing. Cut a straight strip of material, $2\frac{1}{2}$ inches wide and just long enough to fit around the sleeves, adding one-half inch to this length. Sew the ends of the facing together with a plain seam, one-fourth inch wide. Place the right side of the facing against the wrong side of the end of the sleeve; join the two with a plain seam. Turn the facing to the right side of the sleeve and finish by the same method used for the facing around the neck.

The pajama coat may be fastened at the neck with "frogs." These should be firmly fastened to the garment, with stitches that show as little as possible on the right side. How will you do this?

REVIEW QUESTIONS

1. How was lace first made?
2. Name the machine-made laces that may be used for underwear.
3. What kinds of lace are suitable to use on muslin, long cloth, or cambric underwear?
4. What kinds are suitable to use on nainsook underwear?
5. Why is torchon lace not suitable to use with nainsook? Valenciennes with muslin?

FACTS ABOUT LACE (*Continued*)

Lace edging is made with one straight edge and one scalloped edge.

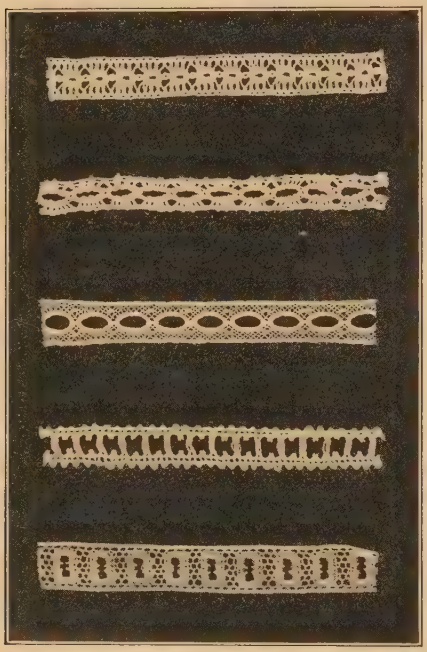
Lace insertion is made with two straight edges, and is used between two edges of cloth, between two strips of lace edging or insertion, or with beading. There are many combinations in which it is used, and different ways in which it may be joined in sewing to other material. Insertion and lace of the same kind come in like patterns, and when both are to be used on a garment, the patterns should be the same.

Beading is made with two straight edges and with openings large enough for ribbon of different sizes to be run through. The openings for the ribbon are of different shapes — square, round, rectangular, or oval. Beading is made from either linen or cotton thread.

Lace edging, insertion, and beading are usually purchased by the yard, unless many yards are to be used, when it is bought by the bolt. It is usually cheaper when bought by the bolt.

The straight side on edging, insertion, or beading should be finished with a strong thread which is not broken at any point. We sew over this thread when overhanding the lace to cloth or other lace, and in order to make a good joining the edge of the lace must be firm.

When selecting any kind of edging, insertion, or beading, see that the pattern is joined together securely without fine threads that are likely to break in a short time. The best beading is always made with firm, even threads, with the threads forming the openings fastened tightly to the threads forming the edges.



Good Types of Beading

Lace edgings launder best which have the least number of picots used in finishing the scalloped edge. A picot is a tiny loop on the edge of the lace scallop.

Edging that is about one-half inch wide will make the daintiest finish for the nightgown, as it is to be used with beading. The beading must not be wider than the edging. Too much lace, or lace that is too wide, will spoil the appearance of the gown.

LABORATORY EXERCISES

MAKING THE NIGHTGOWN OR PAJAMAS (*Continued*)

To join the ends of lace: Cut a four-inch piece off the end of your lace edging. Cut the same from the beading. Divide the lace edging into two pieces. Examine the two

ends to be joined. Place the end of one piece over the end of the other piece so that the same parts of the design in the lace are together. Pin them in this position. Cut off the lapped ends of the lace until the lapped part is about one-half inch wide. Use a thread without a knot. Begin at the plain edge of the lace and overhand the two edges together; continue overhanding the raw edge of the lace, following the pattern edges carefully; continue across the top of the lap and down the second raw edge. Fasten with two or three stitches, one over the other.

The joining should show just as little as possible, and the stitches used should be very small, but close together so that the lace will not ravel. Always work on the right side.

In joining the beading, follow the directions given for joining the lace edging, and in addition overhand around the inside edge of the lapped openings in the beading.

The Finished Pajamas

To sew lace on the nightgown: Overhand the edges of the lace edging and beading together. Do not use a knot in the thread. Find the point where the top of the shoulder strikes the neck of the gown. Begin at this point to sew on

the beading. Place the right side of the beading and the right side of the gown together. How can you tell the right side of the beading? Hold the edge of the beading and the edge of the neck together, between the first finger and thumb of the left hand, with the lace next to you. Overhand together, taking small stitches that go through a little of the edge of the cloth and through the small holes in the edge of the lace. The joining of the lace ends should be done after the lace is sewn on the garment.

In putting the lace on the sleeves, begin at the seam. Hold the lace and cloth over the first finger of the left hand between the thumb and second finger, with the lace on top. Overhand. By holding the edging in this way, it is slightly fulled on the edge of the sleeve.

Continue work on pajamas.

REVIEW QUESTIONS

1. How is lace edging made? Insertion?
2. How is beading made, and for what is it used?
3. State the things you should observe when buying lace edging; when buying insertion; when buying beading.
4. What is a picot?
5. How are small amounts of lace bought? Large amounts? In which way will you buy the lace for your nightgown?

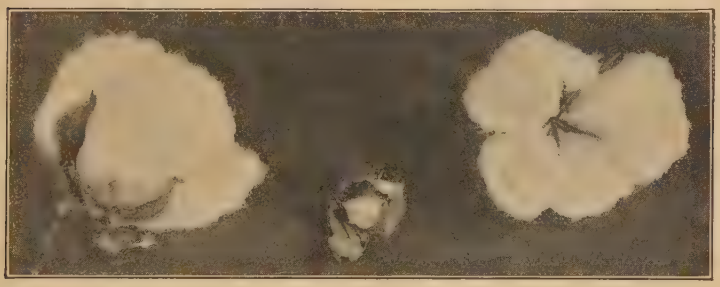
COTTON

More clothing is made from cotton than from any other fiber. Besides the many kinds of cloth used for dresses, waists, aprons, and underclothing, there are stockings, gloves, knitted underwear, laces, and embroideries which are made from cotton. Thread for sewing, crocheting, and embroidering is made from cotton. Absorbent cotton is used by doctors, and gun cotton is used for explosives.

Cotton is grown in the Southern States. Texas produces more cotton than any other state. The principal countries growing cotton besides the United

States are Brazil, India, and Egypt. There are a great many different varieties of cotton.

The cotton seeds are planted in the early spring. The crop begins to ripen in July and continues to do so until November or sometimes December. Cotton fiber is obtained from the cotton bolls, or seed pods, of the cotton plant. The outside of the cotton boll is brown, but when it is fully ripe the brown covering



Cotton Bolls

breaks and a white fluffy mass appears; this is the cotton fiber, and it clings to the seeds. The cotton is ready for picking when it reaches this stage.

Men, women, and children go through the fields picking the cotton from the bolls by hand and placing it in bags or baskets. The cotton is then sent to the gin house where the fibers are separated from the seeds. Formerly the seeds were pulled from the fiber by hand, and it took one person a whole day to separate one pound; but in 1793 Eli Whitney invented a machine called a saw gin which separated the fibers from the seeds. This machine, now known as the cotton gin, made it possible to do much more work in one day than could be done by hand. All our cotton to-day is separated by machinery and the process is called "ginning."

The oil from the seeds is used in making salad oil, cooking fats, soaps, and candles; and the cake left after the oil is pressed out is used for feeding cattle and making fertilizer.

The cotton fiber is pressed into bales which are covered with cloth and bound with iron bands. It is then ready for shipping. Cotton bales in the United States weigh about five hundred pounds.

LABORATORY EXERCISES

OTHER METHODS OF FINISHING THE NIGHTGOWN OR PAJAMAS

Textile study: If possible, secure some cotton bolls to examine. Observe how the seeds and fiber are joined. Separate the fiber from the seed. Place a fiber under a microscope, if there is one available, to see how it looks.

Featherstitching: This is a stitch used for decoration.

Place the work over the left forefinger and hold it with the thumb. Start with the knot in the thread on the wrong side and at the end farthest from you. Work towards you. Place the needle as shown in the picture, holding the loop of thread down with the thumb of the left hand. A stitch is made on one side of the middle line, slanting the needle toward the line, and then on the other side of the middle line, pointing toward the line. The featherstitch may be varied by making two or three stitches on one side before crossing to the other side of the line.

The aim in featherstitching is to do it evenly. Practice making the stitch on a piece of one-eighth-inch checked gingham.

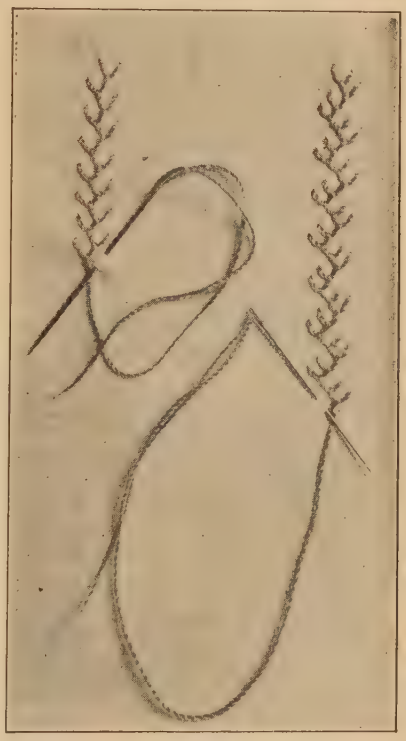
Featherstitching in patterns: This may be used on the fronts of nightgowns, underslips, pajama suits, dresses, or "teddies."

Make some designs on paper that you think would be pretty to use for featherstitching the front of a nightgown.

Try making one of these on a square of long cloth. What kind of floss should you use?

The facing around the neck of the pajama coat may be finished with featherstitching instead of stitching by machine.

Bias casings: These are used in place of lace and beading on underwear. Use colored dimity and a square of long cloth for making the practice piece. Use the dimity for making the bias strips. To cut a true bias, fold over the corner of the cloth so that the woof threads lie parallel with the warp threads; crease. This crease shows the true bias of the cloth. Cut along this crease. From the cut edge, measure at right angles a depth of two inches. Make a dot on the cloth with a pencil. Use a gauge and continue measuring at different points from the cut edge. With a yardstick draw a pencil line across the cloth, connecting the dots. To make a second strip, measure from the line just made, in the same way that you did from the cut edge. Make as many strips as desired. Cut along the pencil lines.



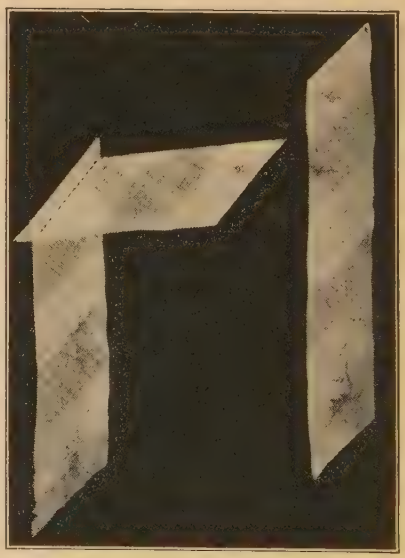
METHOD OF PLACING NEEDLE IN FEATHER-STITCHING

To join two bias strips, place the ends, with the right sides together, so that the warp threads are parallel to each

METHOD OF FOLDING CLOTH WHEN CUTTING A TRUE BIAS

other. Sew a plain seam, being careful to have the edges of the bias band even at the joining when the seam is opened.

Fold down both of the cut edges of the bias strip one-fourth inch on the wrong side of the cloth. When making this fold, do not stretch the material. Sew the bias strip to one edge of the square of long cloth in a plain seam, sewing in the crease in the dimity, and having the right side of the bias strip and the right side of the long cloth together. Baste the other folded edge down over the seam so that the fold just covers the stitches. Hem, being careful that the stitches do not show on the right side. On the right side of the bias strip, as close to the seam edge as possible, make a row of fine featherstitching. Run ribbon or tape through the casing.



METHOD OF JOINING TWO BIAS STRIPS (AT LEFT); THE JOIN AFTER SEAM IS COMPLETED (AT RIGHT)

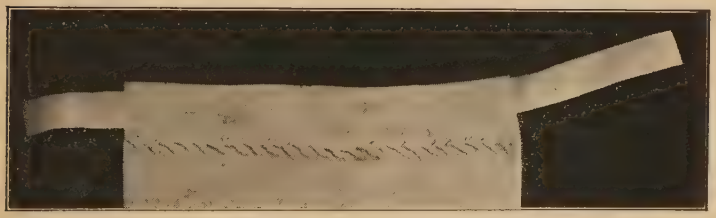
REVIEW QUESTIONS

1. In what ways is cotton fiber used?
2. Where is cotton grown?

3. Describe the structure of the cotton boll.
4. How is cotton picked?
5. What is ginning?
6. Who invented the first cotton gin? When?
7. How is cotton fiber prepared for market?

HOW COTTON CLOTH IS MADE

The cotton bales are shipped to many parts of the world where factories use the cotton in different ways. Some factories make only thread, others make only certain kinds of cotton cloth, such as gingham, while still others may make only underwear and hosiery.



A Finished Casing That Might be Used Around the Neck of a Nightgown

When the bales reach the factory they are opened and the cotton is removed from its wrappings. It is then placed in a machine which blows out the dust and dirt. This machine is called a picker. The cotton as it leaves this machine looks like a roll of cotton batting about six feet wide, such as we see used for making bed comforters. This roll is then placed in another machine in which the cotton is cleaned more thoroughly and the fibers are straightened. When it comes from this machine it is in the form of a long, soft rope. This process is called "carding."

The cotton rope is then passed through a series of machines, each one making the rope smaller in size

and twisting it to make it stronger. This is called "spinning." The thread which is thus spun from the rope, and is to be used in making cloth, is called "yarn."

The yarn may be bleached before it is ready for the loom. Perhaps it is dyed, as in making gingham, or it may be prepared for making mercerized cotton cloth. The yarn is then sized. This is a process in which starch or some other material is put into the yarn to make it smoother, so that it will stand the strain of weaving. Have you ever seen any one use beeswax on sewing-thread? It has the same effect as the sizing on the yarn.

The yarn is now ready for the loom. Cloth is now made on looms run by machinery. Our great-grandmothers made the cloth on hand-looms, which was a very slow process. The first loom run by machinery was invented in 1784 by Edmund Cartwright of England.

In preparing the loom for weaving, the warp yarns are wound on a roller at the back of the loom and are threaded through the frame of the loom and fastened to the cloth beam in front. The woof yarns, or filling yarns, are wound on bobbins or spools which are fastened into the shuttle. In weaving, the shuttle passes back and forth across the warp yarns, weaving under and over them as the design of the cloth requires. In all looms there are devices for separating the warp threads so that the shuttle passes through easily, and other devices for pushing the woof threads tightly together. As the cloth is woven, it is rolled on the beam at the front of the loom.

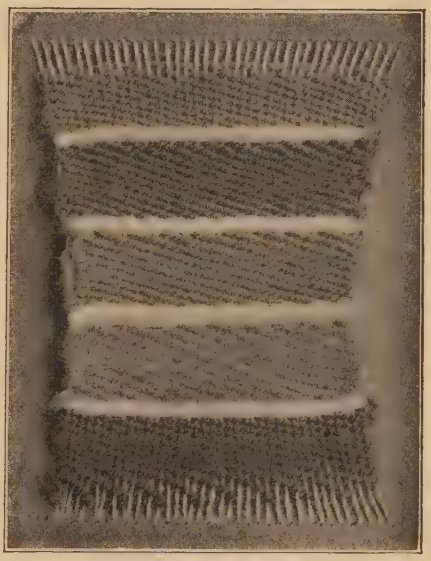
The cloth, as it comes from the loom, is inspected to see if there are any defects, and the thread-ends are cut off. The cloth may then be bleached, as in mak-

ing white materials; or perhaps it is dyed, if the yarns were not dyed before weaving. Usually the cloth is starched, and at the last it is stretched and pressed between heavy rollers to give it the smooth finish we like on cotton cloth. It is then wound into bolts and is ready for the market.

LABORATORY EXERCISES

MAKING THE NIGHTGOWN OR PAJAMAS (*Continued*)

Textile study: Examine the threads pulled from a piece of cotton cloth. Can you see the twist in the thread? If there is a small hand-loom at the school, practice weaving on it. Examine the loom. Look at pictures of power-looms. Perhaps there is in the neighborhood a factory doing weaving which the class can visit.



THE WEAVING CARD

Make a weaving-card by taking a piece of stiff cardboard and using a large darning-needle; make a row of holes one inch from each end, having the holes $\frac{1}{4}$ inch apart. Take heavy, firmly twisted white cotton floss, and thread it into a large darning-needle. Make the warp threads by bringing the needle up through a hole at one corner, taking the thread across and down through the opposite hole. Bring the needle up through the next hole, running the thread across the card

to the opposite hole, and so on until the card is finished. Fasten the threads well. Use colored yarn for the woof.

Continue work on the nightgown or pajamas.

RIBBONS TO USE WITH UNDERWEAR

Ribbons of many widths and kinds are to be found in the stores. They are made of silk, silk and cotton, or of artificial silk called rayon. Ribbons are woven on looms. A number of widths of ribbon will be woven, side by side, on the same loom, to save time in manufacture. Ribbons are made in all kinds of designs, and in all colors, and one has a gay assortment to choose from when buying. When finished at the factory, ribbons are wound into round bolts with a strip of paper between the layers of ribbon. Baby ribbon is sometimes wound on wooden spools. Ribbons may be purchased by the yard or by the bolt. The number of yards in a bolt varies. Ribbon usually costs less when purchased by the bolt, and when buying a great deal of ribbon to use in underwear it is more economical to buy it in this way.

Ribbon for underwear should always be white, or of a very delicate color, such as light pink or blue. Bright pink, green, yellow, or rose are examples of poor colors to choose. Baby ribbon is the kind commonly used for underwear. It comes in many qualities. Some kinds are sold as "wash" ribbons, which can be laundered. Not all "wash" ribbons launder well, however, and it is always better to remove the ribbon from the beading before laundering a garment. The very cheap baby ribbons are not firmly woven, and when used pull out of shape; if there is any strain on the ribbon, it may break. Select a ribbon which has a firm edge and holds its shape when pulled lengthwise.

Cotton and linen tapes may be used in underwear in place of ribbon. If these are used, they will not have to be removed when the garment is laundered, but they do not give so dainty a finish to the underwear as does the ribbon. They are good to use when one has little time to spend on the care of clothing. Sometimes crocheted cords are made to use in underwear. These are made from cotton crochet-thread.

A tape-needle is used in running ribbon or tape through the beading. The eye of the tape-needle is made either lengthwise or crosswise of the needle, and is wide enough to hold narrow widths of ribbon without crushing them.

Sometimes, in elaborate underwear, wider ribbons than baby ribbon are used. If the garment is finished with casings, ribbon may be selected which is the width of the casing. Wide beadings, which will hold ribbons of different widths, can be purchased. The ribbon should be the width that will pass through the openings in the beading without being crushed.

LABORATORY EXERCISES

MAKING THE NIGHTGOWN OR PAJAMAS (*Continued*)

Measure the amount of ribbon needed for the nightgown.

Continue work on the nightgown or the pajamas.

REVIEW QUESTIONS

1. From what materials are ribbon made?
2. How are ribbons woven?
3. How is ribbon purchased?
4. What colors are suitable for ribbon in underwear?
5. What may be used in place of ribbons in underwear?
6. What is "wash" ribbon?

OTHER COTTON MATERIALS

There are many other kinds of cotton cloth which may be purchased besides the ones that have been studied. It is well to know the names of some of the

Ribbon Loom Weaving Neckties

most common of these materials, and also for what purpose each is used. Materials that can be purchased at all times in the store are called "standard materials." The ones we are to study are standard materials.

Calico is a cheap grade of cotton cloth which is used for making inexpensive dresses and aprons. It is made in figured designs, either on a white or colored background, and is 24 to 36 inches wide. It usually shrinks and fades when washed.

Cheesecloth is a very thin, light-weight, loosely woven cotton cloth, usually 36 inches wide. It is used, like bunting, for decoration, for dust-cloths, and for many other purposes. Gauze used in surgery is one kind of cheesecloth.

Canton flannel is a cotton material with a smooth surface on one side and a long soft nap on the other. It was first made to sell in Canton, China, whence came its name. It is 27 to 30 inches wide and is not dyed. It is used for interlinings in coats, and sometimes for underwear.

Cretonne is a rather heavy cotton cloth made in stripes and colored floral designs. It is 36 to 50 inches wide. It is used for draperies, chair covers and cushions, and for bags and other fancy articles. It often fades in the sun and when laundered.

Chintz is a fabric much like cretonne, and is used for the same purposes.

Denim is a heavy, strong cloth used for covering furniture, for pillows, and for men's overalls. It is 36 inches wide and comes in various colors.

Flannelette is a cotton cloth with a soft fine nap on both sides. It is often made in stripes or checks, which are printed on a white or colored surface. It is used in making kimonos, wrappers, or winter nightgowns.

Organdie is a sheer, very fine, light-weight material that is given a stiff finish. It is used for dresses and waists. It is made in plain colors, or in figures on a white or colored background. It is 18 to 60 inches

wide, and different widths and grades are sold at very different prices.

The Finished Nightgown

Percale is a closely woven, firm material used for dresses or aprons. It comes in white or plain colors,

or in figures on a white or colored background. It is usually 36 inches wide.

Piqué is a heavy white material used for dresses, vests, neckties, and bedspreads. Cords or figures are woven in the cloth when it is made. It is 27 to 40 inches in width.

Sateen is a cotton cloth, woven like satin, and the right side has a smooth, glossy surface. It is used for linings, for bloomers, for covering furniture, for bags, and in other ways. It is white, or made in plain colors, or in figures on a white or colored background. It is 27 to 36 inches wide.

HOME PROBLEMS AND QUESTIONS

Find samples of as many cotton materials as possible. Ask the price per yard of the following: calico, percale, organdie, cretonne, and sateen.

LABORATORY EXERCISES

FINISHING THE NIGHTGOWN OR PAJAMAS

Finish the nightgown: What is the total cost of the nightgown? Make a list showing what each article cost and put this list in your notebook.

Finish the pajamas: What is the total cost of the pajamas? Make a list showing what each article cost and put this list in your notebook. Perhaps your mother can tell you the price of ready-made pajamas, or you can ask the price at the store. How does the price compare with those made in class? Why is there this difference in price? Which suit of pajamas is made of the better material? Which suit would wear the longer?

REVIEW QUESTIONS

1. Name several cotton materials studied in the lesson.
2. Name the cotton materials that can be used in making dresses; aprons; underwear.

3. What cotton materials are used for draperies?
4. For what kind of dresses should organdie be used? Gingham?
5. For what is cheesecloth used?
6. Name any other cotton materials that you know about which have not been studied.

DYEING

Cloth is dyed in the yarn, dyed in the piece, or printed. Ginghams are an example of dyed-in-the-yarn materials, that is, all the yarn to be used in making cloth has been dyed before it was woven. When cloth is made in this way the color is alike on both sides. If the threads in the material are pulled apart, every thread will be found to have the same color throughout its entire length. Materials dyed in this way are much less apt to fade than when dyed in the piece.

A material that is dyed in the piece is first woven and then the piece of cloth is dyed. This is the process used in making such materials as calico or percale. Materials that are dyed in this way often fade badly. When threads are pulled from a dark-colored cloth one can often see spaces on the length of thread that are white, or not so dark in color as the rest of the thread. These spots are where the two threads crossed each other in the cloth and where the dye did not reach the thread; they show that the material was "dyed in the piece."

Either white or colored materials may be "printed" with a design which is stamped on the surface of the cloth. This is done by passing the finished cloth between rollers, one of which stamps the design on the cloth. The design is stamped only on the right side of the cloth. Dimity and lawn are examples of printed materials. Printed materials do not launder well, because the printed design is likely to fade. Some-

times a piece of cloth is dyed in the piece and then printed; as, for example, colored lawns that are figured.

Dark blue calico that has white polka dots is made by first dyeing the piece of material a solid color and then removing the spots with chemicals. The chemicals that are used may weaken the thread in the cloth, and after it is washed several times the spots may become holes because the threads wear out.

All materials that are colored are dyed by one of these methods, whether they are made of cotton, linen, silk, or wool. The dye is taken up by the different fibers in very different ways. Some materials are much harder to dye than others. The textile chemist studies the fibers and the way they will take the dye, and works out the best methods to use.

HOME PROBLEMS AND QUESTIONS

Study the colored cotton samples in your Textile Book and see if you can make a list of six printed materials, two "yarn-dyed" materials, and two "dyed-in-the-piece" materials.

LABORATORY EXERCISES

MAKING THE OUTFIT TO WEAR IN THE FOODS LABORATORY

If the class is to be cooking in the laboratory next term, the apron should be made from a pattern approved by the Foods teacher. If the class is having lessons in Foods and Cookery at the same time that they are taking their sewing lessons, it may be a better plan to make the laboratory outfit instead of making the pillowcase and the laundry bag.

One of the good types of aprons for a girl to wear in the laboratory or when doing work at home is the "butcher's" apron. If the members of the class have made these to use in Canning Clubs, then an apron need not be made in class.

The outfit to wear in the Foods laboratory should consist of an apron, headband, hand towel, and holder.

REVIEW QUESTIONS

1. Name three methods of dyeing materials; explain them.
2. How is printing done? Name some printed cotton materials.
3. How can you tell a "dyed-in-the-yarn" material?
4. Which type of dyeing is best to use for materials that are to be laundered a great deal?
5. Why does white-polka-dotted blue calico wear out?

HOW COTTON MATERIALS ARE ADULTERATED

Cotton is the cheapest fiber commonly used in making materials for clothing. It is not so hard to select a good cotton material as it is to select a good wool, silk, or linen material, because cotton is not so apt to be adulterated. When we say a cloth is adulterated we mean that the fiber has had some cheaper material combined with it, thus making the cloth less expensive and not so good in quality. The material added is called an "adulteration." For example, a piece of woolen cloth, sold as an "all-wool" material, in which some cotton is used, would be adulterated, and the adulteration would be the cotton.

Since cotton is the cheapest fiber, cotton cloth is not adulterated, but sometimes cotton textiles are made of very poor, weak fiber, and the cloth does not wear well. Sometimes the bleaching and dyeing processes used in manufacturing the cloth will be done carelessly, and the chemicals will weaken the fiber so that the cloth does not wear well. In order to test the strength of a cotton material, try tearing it lengthwise. If it tears very easily it is of poor grade and not suitable for making into garments. Thin materials, such as lawn, will tear more easily than muslin, and in making such a test this point should be remembered.

Another adulteration used in cotton cloth is weighting. Weighting is used to make the cloth seem heavier and firmer than it really is. Many kinds of gums, glues, clays, and starches are used for this weighting. After a weighted material has been laundered the true quality of the material can be seen, as the weighting is largely washed out of the cloth. By weaving a material loosely, and adding weighting, a cloth of good appearance can be made, and unless one knows about this method of adulteration, the cloth may seem worth buying. By holding a thin cloth up to the light it is often possible to see the weighting between the threads. In a heavier material the weighting makes the cloth feel harsh, and when it is rubbed between the fingers a fine powder will rise from it. If a heavily weighted material is torn, the weighting can easily be seen as it flies from the cloth. Many cotton materials have small amounts of starch used in the finishing, but when a large quantity is added it becomes an adulteration.

Dotted Swiss is a cotton material in which there are dots embroidered with thread. A good quality of dotted Swiss is expensive. Sometimes dotted Swiss is made with dots of paste stuck on the material. If one looks carefully, it is always easy to discover whether the dots are of paste.

Mercerized cotton materials are made from cotton fiber that has been treated with chemicals in such a way that a silky appearance is given to the fiber and to the cloth made from this fiber. Cotton poplin is a mercerized material. Mercerized cotton is stronger than ordinary cotton. The silky gloss does not wash off when the cloth is laundered. Sometimes cotton cloth is starched and pressed until it has a silky appearance, and when so finished is often sold as "mercerized" cotton cloth. This finish comes off in the first

laundering. Real mercerized cotton materials are expensive; the imitations may often be found by studying the prices.

LABORATORY EXERCISES

MAKING THE OUTFIT TO WEAR IN THE FOODS LABORATORY (*Continued*)

Textile study: Have a sample of dotted Swiss to examine. If possible, have one sample finished with paste dots. Have you seen other kinds of material decorated with paste dots? What kinds? How does the price of dotted Swiss with embroidered dots compare with that of dotted Swiss finished with paste dots? Which launders the best?

Test muslin samples for weighting; for strength of material. Have one mercerized cotton material to study.

Apron to wear in foods laboratory: Use white percale, muslin, or long cloth for this apron. Measure from the armpit to the bottom of the dress and add 3 inches to this measure. This is the length of material which is needed for the apron.

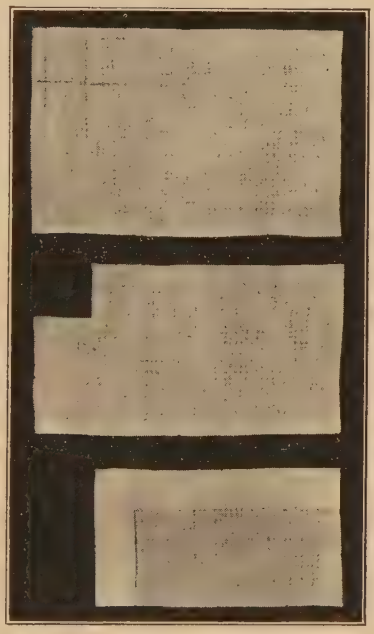
Cut off the selvedge down each side of the material. Why?

Cut off a lengthwise strip of material 6 inches wide down one side of the material. This is to be used for the headband.

Crease a one-half-inch hem down each side of the apron. Across the top of the apron crease a one-half-inch hem. Where the two hems lap at the corners, it will be necessary to cut out the corner to make it smooth and not so thick. Open the hems and cut out a square of material, allowing the cut to extend to the fold made second in creasing the hems. Baste down the hems on the sides of the apron. Turn down the hem across the top; before basting this hem, fold each cut end under to make a diagonal crease from the corner of the apron to the edge of the hem; baste; hem these diagonal folds down on to the first hem by hand,

so that the stitches do not show on the right side of the apron. Baste the hem across the top of the apron. Stitch all three hems by machine.

To make pockets in the apron, turn the finished upper corner down on to the right side of the apron to form a triangle with its sides straight with the thread of the material. The sides of the triangle should be 8 to 10 inches in length, depending on the size of the girl. Baste the edges of the triangle down to the apron; stitch by machine along the fold of the hem which runs parallel with the woof threads; turn the corner and stitch 3 inches up the fold which runs parallel with the warp threads. How will you fasten the ends of this stitching to make the pocket strong? Remove bastings.



Three Steps in Making a Mitered Corner

Use two pieces of white linen tape, one inch wide. To measure the length of one piece, make it long enough to extend from the top of one pocket diagonally across the back down to the lower corner of the pocket on the opposite side of apron, holding the apron so that it fits neatly against the dress, adding one inch to this measure. How will you sew this tape to the apron?

There are two ways to finish the bottom of the apron. Method 1: Make a two-inch hem across the bottom and stitch by machine, being careful to make the ends even

with the edges of the apron. When you wear the apron, the sides of the apron will extend below your dress, while in front the apron should be even with the edge of your dress, provided that you have made the tape long enough. Method 2: Put on the apron and have some one turn up the bottom so that it is even with the edge of your dress at the sides as well as in front. Baste along this fold and remove the pins. How wide at the center front of the apron is the piece which is folded up? Make a gauge this width and measure and baste the hem. It may be necessary on the curve to lay some tiny pleats; do this by straightening out the folded edge, making the pleat, and then folding down the edge across this pleat; stitch by machine. Do the ends of the hem extend to the side edge of the apron? Why? How should you fasten the ends of this hem to make it secure?

Method of Crossing the Tapes on the Back of the Apron

Press the apron.

HOW SILK MATERIALS ARE MADE

Silk dress materials, ribbons, stockings, and underwear are all made from silk fiber that comes from the

cocoon of the silkworm. Silk-raising began hundreds of years ago in China, when an empress discovered how silk cloth could be made from the cocoon of the silkworm. Most of our silk fiber comes at the present time from China, Japan, Italy, and France. Little silk is produced in the United States, because labor is much more expensive than in the other countries, and this makes the silk cost more.

The silkworms come from eggs that are laid by a moth. The little worm feeds on mulberry leaves and

Full-grown Silkworm

grows very rapidly. When the worm is full grown, it is three inches long. It then begins to spin its cocoon, which it fastens to twigs. As it moves its head back and forth, it throws out two tiny streams of thick, sticky fluid, one from each side of its head. As the fluid comes into the air it hardens and cements the silk fiber of the cocoon. It takes three days for the worm to complete the cocoon. After the first day the worm cannot be seen, but it can be heard working within.

In order to produce all the raw silk needed, silkworms are grown in nurseries which are specially built for this purpose. Some silk is made from the fiber obtained from the cocoon of the wild silkworm and is called "wild silk."

During the fifteen to twenty days after the silkworm has made its cocoon, it changes from a worm to a

moth. This moth then moistens the end of the cocoon and breaks its way out. In order to keep the moth from coming through the end of the cocoon and thus breaking the silk fiber, the cocoons are heated so hot that the moths are killed. A certain number are al-

Silk Cocoons

lowed to come out, however, so that they can lay the eggs to produce a new lot of silkworms.

After this heating process the silk is ready for "reeling." This is the process of winding the fiber from the cocoon. The cocoons are placed in basins of hot water to soften the gummy substance on the fiber. Then four or five ends of fiber are started from as many cocoons, and are reeled or wound off together. This must be done very carefully. The silk fiber, as it

comes from the cocoon, is 300 to 1400 yards in length, and is very fine and strong. The fiber, as it is reeled

Silk Moth

from the cocoon, is known as "raw silk." The raw silk is made into bales weighing from 100 to 160 pounds, and is then ready to go to the manufacturer.

LABORATORY EXERCISES

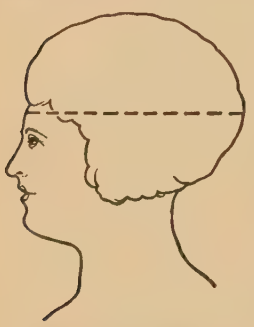
MAKING THE OUTFIT TO WEAR IN THE FOODS LABORATORY (*Continued*)

To make the holder: See section on Christmas gifts for directions.

Making the headband: Use the strip of material 6 inches wide that was cut from the side of the apron. Measure around the head to determine the length of the headband (see diagram). Cut off from the strip of material a piece this length. Fold this strip lengthwise through the middle; baste along fold.

To make a shaped headband: Cut a paper pattern for the headband, making it 3 inches wide at the center front. At the ends, the pattern should be about 2 inches wide. Usually the band is made about 3 inches wide for about 3 inches of the length in front, gradually curving down to

the ends. Lay the paper pattern on the strip of cloth with the straight edge of the paper on the folded edge of the material, with the middle of the pattern at the middle of the strip of cloth. Pin into place, being careful to have the raw edges of the material placed evenly together. Cut through both thicknesses of material in cutting out the headband.



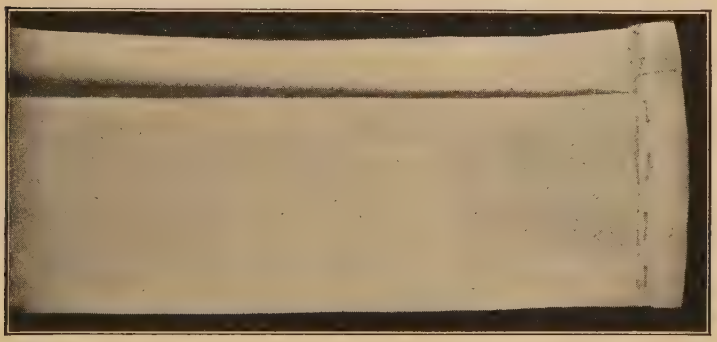
Dotted Line Indicates Points Around the Head at which the Measurement for the Headband Should be Taken. The Band Should Come Below the Edge of the Hair on the Forehead

Along the shaped edges of the headband turn down the material one-fourth inch toward the inside of the headband; crease and baste. Then baste the two folded edges together evenly, as you did in making the pincushion, being very careful to have the folded edges even and the basting stitches so made that they hold the material firmly in place. Stitch by machine along this shaped edge close to the fold. A second row of stitching may be made about one-fourth inch from the first row. How can you gauge this stitching with the presser-foot in order to keep it straight? Remove all the bastings, cutting carefully any threads which may have been caught in the stitching.

To finish the ends of the headband: Turn the ends down one-fourth inch towards the wrong side; baste. Cut two pieces of tape one inch wide and eight inches long, to be used for ties. Find the middle of the end of the tape and the middle of the end of the headband; pin these together with the end of the tape even with the raw edge of the material; baste flat. Turn the end of the headband down one-fourth inch, making a hem with the tape end inside; baste. Fold the tape back against the headband; stitch along the fold of the hem — this fastens the tape in securely. Turn the tape back towards the end of the headband; baste the folded end of the headband down to the tape;

hem the headband to the tape, by hand, along the folded edge. Press the headband. See picture showing finished ends of headband tied.

Headbands are sometimes made to lap at the back, in which case they may be fastened with cuff pins or with buttons and buttonholes or with snap fasteners. With either of these finishes, the headband should be cut two



First Step in Finishing Headband

End of headband with tape basted into position, ready for stitching by machine

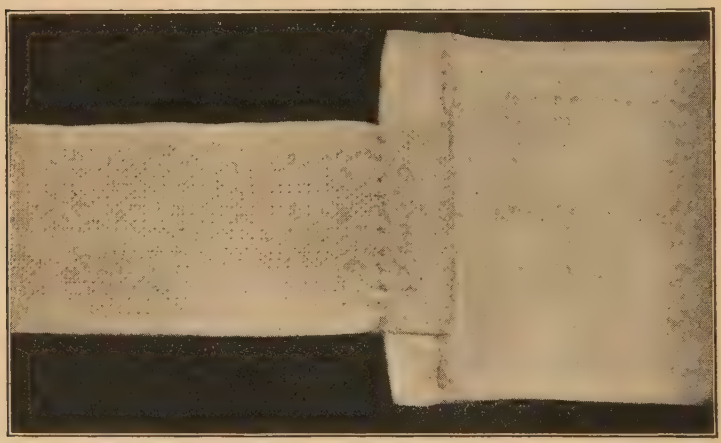
inches longer than the measurement around the head. The headband material should be washed before sewing on the buttons or snap fasteners. Why?

Headbands may be cut straight without a curved top. The straight raw edge may be finished by the same method as that used for the curved edge. It would not be desirable to use tape for ties on the ends of a straight, wide headband. Why?

HOW SILK MATERIALS ARE MADE (*Continued*)

A great quantity of raw silk is brought to the United States to be manufactured into cloth, ribbons, and other articles. Most of the silk factories are in New Jersey, Connecticut, New York, and Pennsylvania.

When the bales reach the factory in this country the bundles, or hanks, of yarn which make up the bale are first sent to the throwster. The throwster puts the hanks of silk to soak in order to remove more of the gummy substance from the fiber; then the skeins are placed on reels, and the silk is wound from the reel on to spools. The spools are then placed in a machine which winds and twists together two or more strands



SECOND STEP IN FINISHING END OF HEADBAND

END WITH TAPE, TURNED AND HEMMED DOWN TO FOLDED END OF HEADBAND

from the spools so that they form one yarn. This yarn is to be used for warp threads on the loom and is called "organzine." The yarn to be used for woof is not so good a quality of silk and is only loosely twisted. It is called "tram."

Silk is dyed in the yarn or in the piece. The best grades of silk cloth are dyed in the yarn. In order to dye the silk, the gum must be removed from the fiber. This is done by boiling the silk yarn, after which it is known as boiled-off silk. This gum makes up one

fourth of the weight of the silk. Some manufacturers, in order to make up this loss in weight, dip the silk in some material, such as chloride of tin, which the yarn

Weighing Raw Silk in Japan

absorbs until it often weighs twice or four times as much as the boiled-off silk. This material added to silk is called "weighting." This weighting causes silk fiber to crack on creases when worn, or to rot and crumble, which often happens to silk garments when

they are hung away in closets for long periods. Black silks are weighted more often than the light-colored silks.

In weaving silks many beautiful patterns are made by the use of the Jacquard harness. This is a device on the loom which controls and regulates the warp threads in the weaving so that the pattern is woven into the cloth. This wonderful machine was invented in 1801 by Joseph Marie Jacquard, a Frenchman.

Sometimes in silks the patterns are made by printing, stenciling, or embroidery. Moiré, or watered effects, are produced on silk cloth or ribbons by running them through engraved rollers that stamp the cloth.

There are many processes that may be used in finishing silk materials. Sometimes fifty will be used before the material is ready to be sold as finished cloth.

HOME PROBLEMS AND QUESTIONS

Collect as many silk samples as you can to bring to class. Can you find a piece of ribbon or cloth finished in a moiré pattern? Can you find a printed silk material? Can you find one that has been woven with the Jacquard harness on the loom?

LABORATORY EXERCISES

MAKING THE OUTFIT TO WEAR IN THE FOODS LABORATORY (*Continued*)

Continue work on the Foods Laboratory outfit.

REVIEW QUESTIONS

1. Where are most of the silk factories in the United States?
2. What does the throwster do with the silk fiber?
3. What are the warp yarns called? The woof yarns?
4. How do the two differ?
5. How may silk be dyed?
6. What is weighting? What kinds of silk are apt to contain the most weighting?

TOWELS

It is necessary that a towel should be soft and that it should absorb or take up water quickly. An all-linen towel does this better than a cotton or cotton-and-linen towel. The all-linen towels are the most expensive and for this reason are not always used. The material from which towels are made is called "toweling." It comes in various widths and in different kinds and qualities. A toweling made of part cotton and part linen is called "union" toweling.

THE FINISHED APRON AND HEADBAND

There are several kinds of toweling used in making kitchen towels. "Glass toweling" is a smooth, lightweight material usually made in checks formed by red or blue lines. It is especially good for wiping china and glass ware. Glass toweling made from linen is the best, but the most expensive.

There are two kinds of "crash toweling" used in the kitchen: (1) the heavy crash toweling that is used for drying cooking utensils, and (2) the finer crash toweling used for hand towels. The heavy crash toweling is rough and uneven on the

surface, while the finer grades are smoother. Some crash towelings are woven with a red or blue stripe down the lengthwise edge.

Towels to use for the face and hands are usually made of "huckaback" and "damask" towelings. Huckaback is woven so that the surface of the cloth is rough. A rough surface on a towel makes it absorb moisture more readily. Huckaback toweling is made from cotton, and also from linen. Linen huckaback of good quality is a very beautiful material.

Damask toweling is smooth in finish, and the designs woven in the material are often very beautiful. It is sometimes made without a design.

"Turkish" or "bath" towels are woven in such a way that there are loops over the surface of the cloth, and this gives them a very rough surface.

Towels may be bought ready-made, or the toweling may be purchased by the yard and the towels made at home. Some of the more expensive huckaback and damask towels are woven with finished designs across the ends. Guest towels are narrow, short towels, often finished with hemstitched ends, cross-stitching, embroidery or lace.

LABORATORY EXERCISES

MAKING THE OUTFIT TO WEAR IN THE FOODS LABORATORY (*Continued*)

Textile Study: Examine samples of glass toweling and crash toweling. Examine samples of linen huckaback and of cotton huckaback. Which do you think best to use for making a hemstitched towel? Which material would be best to use for the laboratory towel?

Making the laboratory towel: Use three-fourths yard of fine crash toweling. Turn and baste one-half-inch hem on

each end; stitch the hems by machine, following the directions for finishing the ends of the hems on the protection square. What number thread should be used?

Making a fancy towel, suitable to use for a gift. Materials needed for making the gift towel:

$\frac{3}{4}$ yard huckaback guest toweling.
No. 60 white cotton thread.
Needles.
Cotton floss for cross-stitch.
Canvas for cross-stitching.

Hemstitching practice: Use a piece of heavy, coarsely woven material upon which to practice hemstitching. Straighten the end of the material; measure in $2\frac{1}{4}$ inches from the end on the selvedge; mark with a pin. Pull out four or five of the woof threads, beginning at the point marked by the

Method of Hemstitching

pin; be careful to pull the same thread all the way across the cloth. Turn under the raw edge one-fourth inch toward the wrong side; turn again to make a hem, bringing the first fold even with the edge of the open space made by the drawn threads; baste the hem very carefully, using one-fourth inch basting-stitches.

Knot the thread. Hold the cloth so that the hem is held as for hemming. Hide the knot under the fold of the hem, beginning as you would for plain hemming. Throw the thread up and toward the right, away from the hem. Pass the needle under four of the threads, pointing the needle down and toward the hem; pull the needle through. Again pass the needle under the same group of

threads in the same way, but this time, before drawing it through, take up a little of the under cloth and also a little of the fold of the hem, making the needle come out between two groups of threads. This ties the group of threads together and also fastens the hem. Continue across practice piece. Fasten the end with two stitches, one over the other.

"Double hemstitching" is made by hemstitching along the other side opposite the hem. Practice hemstitching until you can do it easily.

REVIEW QUESTIONS

1. What qualities are necessary for a good towel?
2. Which fiber makes the best toweling?
3. What is glass toweling?
4. What other kinds of toweling are often used in the kitchen?
5. Name two kinds of toweling used for face towels. Which is better to use?
6. Why is it not wise to hemstitch all towels?
7. What is the price per yard of linen huckaback? Cotton huckaback?

HOW FLAX IS GROWN

Linen is used in making cloth for dresses, waists, suits, table linen, towels, and many other articles. Linen fiber comes from the stem of the flax plant. The plant is an erect stalk growing twenty to forty inches high, with stems branching near the top. It has narrow, lance-shaped leaves and a tiny blue flower. There are many varieties of flax.

Flax has been grown for at least five thousand years in Egypt. To-day Ireland and Belgium produce the best quality of linen fiber. Russia has produced a large part of the world's supply of linen fiber, but it is of a coarse quality. Flax is also grown in France, Egypt, Italy, and Holland. Some flax is grown in the United States and Canada, but it produces a coarse fiber suitable only for making coarse materials.

When flax is to be used for fiber, the seed is sown thickly on the ground. This crowding of the plants keeps the main stalks straight and unbroken, and prevents branching. This slender type of plant is the best from which to get the fiber to use in making linen.

Flax is also grown for the seed it produces. Flaxseed is used in making linseed oil for paints and varnishes, linoleums and oilcloths. The pressed linseed

Harvesting Flax by Hand

cake is used as feed for cattle. Flaxseed is also used for poultices and in flaxseed tea. Perhaps you have seen it used in this way.

The flax plant requires great care during its growth. In Europe this work is done by women and children who weed the tiny plants, going through the fields on their hands and knees. When the flax is ready to harvest, instead of cutting it with a machine as we do wheat or oats, they pull the plants up by hand. The stalks are laid with the roots together and are bound into bundles. These bundles are stacked or hung up to dry.

When the flax is dried, the next process through which it passes is *rippling*. This is a process in which the seeds and dried leaves are removed from the end of the stalk. When it is done by hand, two men sit, one on each end of a long bench, in the middle of which is a large comb which has teeth about eighteen inches long, placed a short distance apart. The flax is drawn through this comb, and the leaves and seeds drop on a sheet beneath the bench. Machines with revolving cylinders are now used for this work. The flax stalks are then tied in bundles and are ready for storage or for the next process.

LABORATORY EXERCISES

MAKING THE TOWEL

Straighten the ends of the toweling. Make a hem an inch wide at each end. How far from the end must the threads be drawn for hemstitching in making a hem this width? Baste hems; hemstitch both ends of towel.

REVIEW QUESTIONS

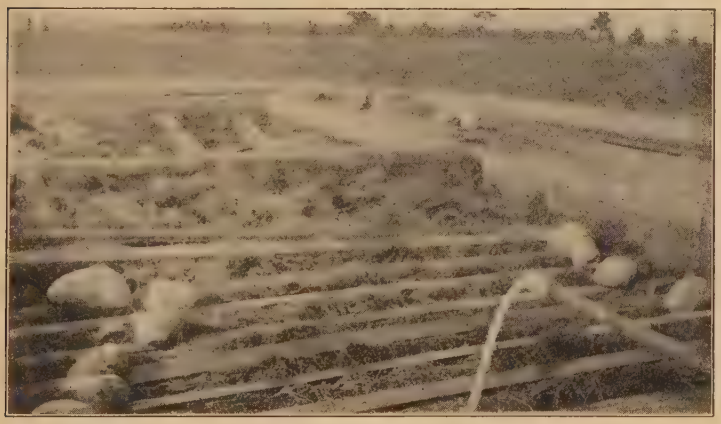
1. From what plant is linen fiber obtained?
2. Where is flax grown?
3. Which countries produce the best flax fiber? The greatest amount?
4. Did Russia and Belgium produce as much flax as usual in 1915–18? Why?
5. Describe the flax plant; its care during growth.
6. How is flax harvested?
7. What is the first process through which it goes after drying?
8. For what is flaxseed used?

THE MAKING OF LINEN CLOTH

The next process through which the flax goes is called *retting*. This is a very important one and it must be carefully done. Retting is the process by

which the outside woody portions of the stem are decomposed or rotted so that they can be removed from the inner part, or flax fiber, which is to be used in making cloth.

Retting is sometimes done by placing the flax fiber on the ground and allowing the dew, the sun, and the rain to rot the outer layers of the stalk; or steam and chemicals are used; or the flax fiber may be placed in



RETTING FLAX

FLAX PONDS BEING FILLED

running water or in pools, where it is left until the outer layers are rotted. The last process produces the best flax fiber.

The water in the river Lys in Belgium seems especially good for this purpose, and some of the best colored, finest, and strongest fiber is produced in this region. The flax bundles are packed into a large wooden crate lined with burlap to keep the dirt out, and the fiber is covered over the top with fresh straw. The crate is then sunk to a certain depth in the water

and weighted down with stones and sod. It takes fourteen or fifteen days for the retting when done in this way, and during this time the odor from the flax is very disagreeable and the water is often poisonous to fish and cattle.

The flax fiber is now put through the processes of *breaking* and *scutching*, during which the outer woody portions are removed from the fiber and the fiber is divided into *line*, the long fiber, and *tow*, the short pieces that have been broken off during these cleaning processes.

Hackling is a process through which the "line" passes for the purpose of combing, splitting, and further separating the fiber into short and long lengths. Other processes follow for cleaning and sorting the fiber, until the linen fiber is at last ready for spinning and weaving. The best materials are made from the "line", while the "tow" is used in cheaper fabrics.

Linen cloth is bleached either by the use of chemicals or by laying it on the grass and allowing the sun and dew to make it white. The last is a slow process, but the linen cloth bleached in this way is always strongest. In Ireland a great deal of linen cloth is bleached in this way.

Colored linen fabrics are made for dresses and suits, but they fade easily in the sun and in laundering. Sometimes it is worth while to have a faded dress or suit re-dyed, since linen cloth of good quality is very strong and should wear well.

HOME PROBLEMS AND QUESTIONS

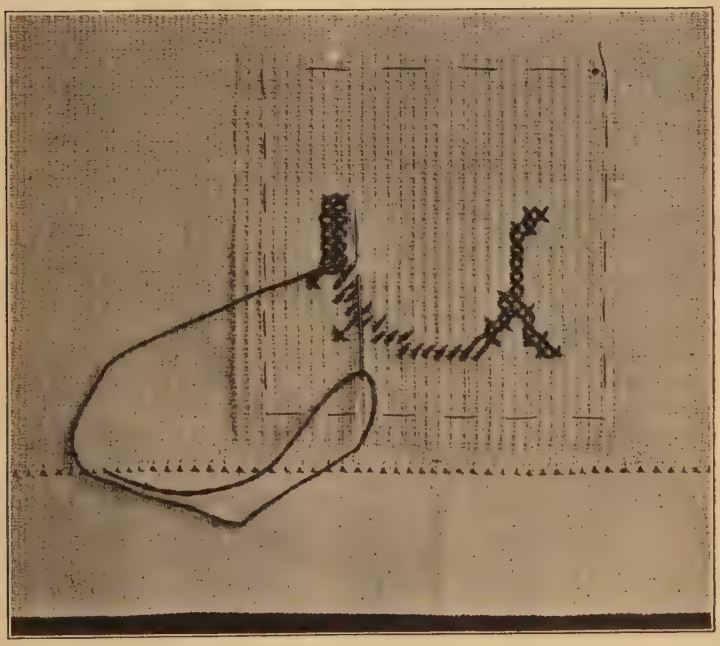
Collect at home any samples of linen materials which you can find. Perhaps some one has a piece of hand-woven linen which you can borrow to bring to class.

If possible, bring some flax seeds to school. Perhaps these can be planted in the spring, or in a box in the schoolroom, so that you can see how the plant looks when it grows. Have you ever seen flax growing?

LABORATORY EXERCISES

MAKING THE TOWEL (*Continued*)

Textile study: Obtain from some of the linen factories a school exhibit showing the various processes through which



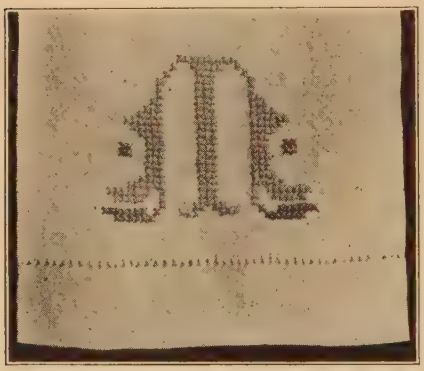
CROSS-STITCHING

CANVAS BASTED TO TOWEL USED AS GUIDE FOR STITCHES

the flax goes before it is made into cloth. Compare the cotton fiber and linen fiber. Examine each under the microscope. How do they differ in appearance? Write a story

on " How Linen Cloth is Made " to read in class and to put into your Textile Book.

Cross-stitching initials or a design on the towel: Do you remember the sampler about which we talked in one of the earlier lessons? This sampler was made with cross-stitch. Cross-stitching is made over canvas which has been basted to the cloth upon which the design is to be produced. Patterns for cross-stitch can be purchased. These patterns show the number and arrangement of crosses necessary to use in making the design, and are often printed in the color to be used. The patterns can be purchased in dry-goods stores, at the pattern departments, or at stores handling art needlework supplies. Usually the canvas can be purchased at the latter place. Perhaps you can make a design in the drawing class.



Initial Done in Cross-stitch

Find the middle of the towel end and baste a piece of canvas, large enough for the design, on the right side of the towel at this middle point, as far from the hemstitching as desired — probably about one inch — so that the warp threads of the toweling and the warp threads of the canvas are parallel.

The cross-stitch is made by crossing two slanting stitches. Make all the slanting stitches that run in one line and are of the same color, first in one direction and then back, thus making the crosses. Place the needle as illustrated in the drawing. The wrong side must be made as neat as possible by using few knots and by doing the work in rows. When the pattern is completed, remove the bastings and pull out the canvas threads, one at a time. Practice cross-

stitching before putting the design on the towel. Cotton embroidery floss that washes well should be selected for cross-stitching the towel. Select a very simple pattern or plain initials for the cross-stitching.

REVIEW QUESTIONS

1. Explain the process of retting.
2. Name other processes through which flax fiber goes before it is ready for spinning and weaving.
3. What is the "line"? The "tow"? How is each used?
4. How is linen cloth bleached?
5. Does colored linen hold its color well?
6. Why is linen huckaback more expensive than cotton huckaback?
7. Name three linen materials used for toweling.
8. Name three linen materials used for handkerchiefs.
9. Name linen materials used for waists; for dresses.
10. How are napkins purchased when they are to be hemmed at home?
11. In what ways may towel ends be decorated?
12. Is it wise to put cross-stitch on "everyday" towels? Why?
13. How should cross-stitching be pressed?

WOOL — WHERE IT COMES FROM

Many of the garments worn in winter are made from wool, which is an animal fiber. A large part of our wool fiber comes from sheep. Some wool comes from the camel, the angora goat, the llama, and the alpaca. In the United States, sheep are raised in great numbers in the Western States. Montana, Oregon, Idaho, and Wyoming are the principal sheep-raising States. England, Australia, Canada, South America, and parts of Africa, Spain, and Germany also produce wool.

The sheep are sheared in April or May. By this process the wool is clipped from the body of the sheep and removed in one piece which is called the *fleece*. The shearing may be done by hand with large shears

made for the purpose, or machine clippers may be used when there are large numbers of sheep to shear. The fleeces are tied into bundles. When many fleeces are sent to market from one farm, or ranch, they are put into sacks which hold about 400 pounds each.

Wool fiber varies from $2\frac{1}{2}$ to $10\frac{1}{2}$ inches in length. Merino wool is the finest. Sheep which are well cared for and properly fed produce the best wool.

If you examine a wool fiber under the microscope, you will find the outside of the fiber covered with tiny scales, or *serrations*. These serrations lap over each other in much the same way as do the outside layers of a pine cone. When heat and moisture are applied to the wool fiber, the serrations soften, and if pressure is used they are locked together. This locking together is known as the *felting property* of wool, and because wool has this property it is possible to make from it a good yarn and cloth of close, firm texture.

Besides the making of clothing, wool is used in making carpets, rugs, underwear, stockings, blankets, and knitting yarns which are used for shawls, sweaters, caps, and mittens.

Wool is often adulterated by adding cotton fiber. If cloth is made of cotton and wool fiber, it should be sold as a cotton and wool fabric, and not as "all wool." Because there is not enough wool produced each year to furnish all that is needed, the new wool fiber is mixed, in many cases, with *shoddy*, *mungo*, and *extracts*. These materials are the fibers obtained from old wool cloth, knitted wool underwear, and wool stockings which have worn out. When old wool rags are sold to the junk dealer he, in turn, sells many of them to the manufacturers of wool yarns. *Flocks* and *noils* are short waste fibers left from the spinning and finishing processes, and these are sometimes added to wool yarn.

LABORATORY EXERCISES

MAKING THE UNDERSLIP

Look in the pattern book and find a two-piece underslip pattern. How is the size of the pattern stated? Of what materials could the slip be made? How much material 36 inches wide does the description of the pattern say will be needed? Measure from the top of your shoulder, next to the neck, down to the bottom of your dress; add four inches to the measurement; multiply this last measurement by two. This will give you the number of inches needed for the slip. How many yards will be needed? Is this the same amount stated in the pattern description as being needed?

If the ruffle is to be made of the same material as the slip, more material will be needed. Ruffles for underwear are made from crosswise strips of material. In order to know the amount needed, one must know: (1) how wide the ruffle is to be, (2) how wide the hem on the ruffle is to be, (3) how wide the seam is to be, (4) whether any tucks are to be used, and if so (5) what size they are to be, and (6) how wide the slip is around the bottom. The length of the ruffle should be about $1\frac{1}{3}$ times the width around the bottom of the slip.

Work out the following problem, using a piece of paper upon which to practice. A ruffle is to be put on a slip that is two yards around the bottom; the hem on the ruffle is to be one inch wide; there are to be three tucks, each one-half inch wide, finished; one-fourth inch is to be the width of the seam where the ruffle is gathered; the ruffle, when finished, is to be six inches wide.

Materials to be brought to class next time:

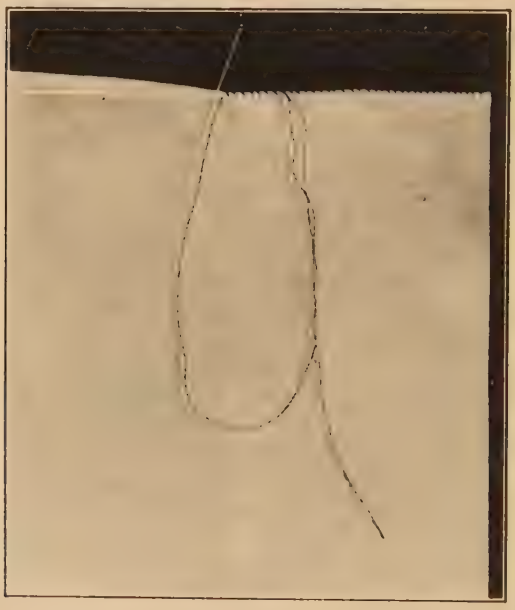
Two-piece pattern for underslip.

Long cloth — amount required without ruffle. A firmly woven, medium-weight novelty material may be used instead of the long cloth if desired.

Thread — Nos. 80 and 90.

Needles.

To make a French hem: Napkins, tablecloths, and sometimes towels are finished with a French hem. This is made in the following way. Fold a plain hem one-fourth inch or less in width; baste; turn the right side of the hem back against the right side of the material above the hem; make a crease in the cloth that comes just even with



Method of Making a French Hem

the fold of the hem; overhand along this crease, running the needle through the creased cloth and the fold of the hem, making small stitches close together. When the overhanding is finished, press out the crease, making the hem lie in the same position as a plain hem. Practice making the French hem at school.

At home, hem a napkin or towel, which should be brought to school for inspection when finished.

REVIEW QUESTIONS

1. Where is wool fiber obtained?
2. Where is the greatest wool-producing section in the United States?
3. What is the "fleece"?
4. What is meant by the "felting property" of wool?
5. In what ways is wool used?
6. In what way is wool adulterated?
7. What is "shoddy"? How and why is it used?

HOW CLOTH IS MADE FROM WOOL

When the wool reaches the woolen mill, it is unpacked and sorted. The wool is dirty and greasy, and one fleece contains fiber of several lengths. The oil in the fiber is known as the *yolk*. If you have ever put your hand on the back of a sheep, you know how oily the wool feels. This oil protects the fiber and keeps it soft and elastic. The wool from the head, sides, and back of the sheep is finer in quality than that from the belly or shins. The fleece is usually separated into six or seven grades for spinning yarns of different qualities.

The wool is now ready to be washed, or *scoured*, and this must be done very carefully with soft, warm — not hot — water and soft soap. The wool passes through a series of tanks during this process, and in each tank is pushed back and forth by means of wooden forks which carry it forward.

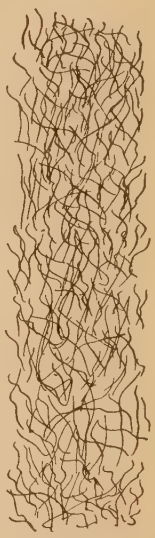
The wool fiber is next dried in a machine called a "hydro-extractor", and is then beaten into a fluffy mass. All of the oil has been removed during the scouring, but in order to make the wool soft and elastic and better for spinning, olive oil is added to the fiber.

The wool may be cleaned still further by the use of a machine called a burr-picker, which takes out any burrs, leaves, or other dirt which the sheep have picked

up in the pasture and which did not come out in the scouring.

There are two kinds of yarn made from wool fiber: (1) worsted and (2) woolen. Worsted yarn is made from wool that has been combed until all the fibers lie parallel before they are twisted into yarn. Worsted yarns are stronger than woolen yarns. They are made from long fiber, the short fiber being removed in combing. Worsted yarn is the more expensive, and is used in making high-grade worsted materials and underwear. Woolen yarn is made from the short fibers, so treated that the fibers are running in every direction when the yarn is ready for weaving. Woolen yarn is more "fuzzy" than worsted yarn. Worsted yarns are used for making materials that are to show the weave very plainly, as in serge, while woolen yarns are used to make cloth with a fuzzy surface, the weave of which does not show distinctly, as in broadcloth.

Showing Construction of Worsted Yarns



Showing Construction of Woolen Yarns

Wool is dyed either in the yarn or in the piece. It dyes very easily. Printed designs and elaborate Jacquard designs are not used so often as in silk and cotton materials.

Wool cloth goes through various finishing processes, depending upon the kind of material that is made. One of the most interesting of these is *napping*, which is

used in making such materials as blankets. This is done by passing the cloth between rollers covered with teasels. The sharp points on the teasel pull up the fiber ends on the surface of the cloth and make a heavy nap. Sometimes this nap is clipped until it is even and shortened. The short fiber clipped from the surface is sometimes felted into the back of a poor quality of woolen cloth to make it appear heavier. These short ends often work out as the garment made from such cloth is worn, and sometimes are found in the bottom of pockets, along seams or hems, or between the lining and wool material of a coat. Dress, coat, and suit materials of wool must be pressed and wound into bolts to make them ready for the market.

HOME PROBLEMS AND QUESTIONS

Collect as many wool samples as you can to bring to school. Has any one some wool she can bring to school? If the teacher will get a wool exhibit from some of the manufacturing firms, it will be interesting to study.

LABORATORY EXERCISES

MAKING THE UNDERSLIP (*Continued*)

Read the directions on your pattern. Open the pattern and measure the length to see if it needs changing. Lengthen or shorten it in the same way that you did the nightgown. Follow directions for cutting given on the pattern. Make narrow French seams down the sides, sewing on the machine. Use felled seams on the shoulders. Hem them down by hand, as they will look daintier and show less than when stitched by machine.

REVIEW QUESTIONS

1. What is the first process through which the wool goes after it reaches the woolen mill?

2. Of what value is the "yolk" in wool?
3. Explain the process of "scouring."
4. Through what other processes may wool fiber go before it is spun?
5. What kinds of yarn are used in making wool materials?
6. Give the process for making each kind.
7. For what types of material are the different kinds of yarn used?
8. How is wool material dyed?
9. Explain the process of "napping."
10. What is the "fuzz" often found in hems and along seams of wool dresses and coats?

WOOL MATERIALS COMMONLY USED

There are so many kinds of wool cloth that it would be impossible for us to learn the names and to know all of them in one lesson. Wool materials of the best grades are expensive, and the price will indicate something in regard to the quality. There are always a large number of standard wool materials on the market, and in addition many novelty materials appear each year. It is not a wise plan to buy novelty materials if one is trying to select a material that will wear well for a long period without going out of style.

Serge is one of the commonly used wool materials. There are many types of serge on the market. Serge is made of worsted yarn in a twilled weave. It comes in plain colors, dark blue being one of the favorite colors. It is used for making suits, skirts, and dresses. It is 42 to 54 inches wide, and varies much in price.

Cheviot is somewhat like serge. It is heavier and sometimes rougher in finish. It is used for suits and coats. Some cheviots are called "diagonals."

Tweed and *homespun* are two materials used for suits and coats. Both were originally made by hand, but now are made by machinery. In some sections of the

Southern States homespun cloth is still made by the mountain people. Homespun is a loose, rough material made of coarse yarn. Tweed was first made in Tweed, Scotland. It is a rough, loosely woven cloth that is

A Four H Sewing Club

The girls meet once or twice a month during the summer vacation under the direction of a leader who is supervised by the boys and girls' club division of the department of agricultural extension in the state agricultural college. Do you have such a club in your community?

usually woven of several shades of yarn, giving a mixed effect with no distinct pattern.

Broadcloth is made from woolen yarns. It is a beautifully finished material, soft and smooth, with a glossy finish on one side. It is used for suits and dresses. Broadcloth of a good quality is very expensive. *Ladies' cloth* is much like broadcloth, but is not so heavy. It is used for suits and dresses.

Alpaca, mohair, and *brilliantine* are three fabrics

somewhat alike. They are all very smooth, and are finished with a glossy surface that sheds dust well. Fiber from the llama is used in making alpaca. Mohair and brilliantine are made of fiber from the Angora goat. All three of these materials are used for dresses and dust coats, and sometimes for men's suits. All three of the materials are mixtures of cotton and wool.

Albatross, *cashmere*, *challis*, and *Henrietta cloth* are light-weight materials used for dresses, wrappers, and babies' clothes. Challis is often used for girls' dresses. Challis comes in plain colors or with a small printed design. There are two kinds, domestic and imported, the imported being the finer and softer. Challis wears well and can be washed. Wool challis is a very different material from cotton challis. Henrietta cloth and cashmere are made in twilled weave and are much alike.

Flannel is a soft, napped material used for babies' clothes, petticoats, dressing-jackets, shirts, and for many other purposes. It is a material every girl should be able to distinguish.

Baby flannel is a closely woven, cream-colored material made from rather fine yarns, either of all-wool, wool and silk, or wool and cotton. That made of wool and silk is the best kind to use for baby clothes; the all-wool flannel has to be laundered very carefully to prevent shrinking.

Melton and *covert cloth* are used in making overcoats. They are heavy, firmly woven materials.

HOME PROBLEMS AND QUESTIONS

Find the price by the yard of the following: serge, broadcloth, cheviot, flannel; and of any of the other materials mentioned in the lesson.

How are blankets purchased? What do they cost? Examine the rugs at home to see whether the face of the carpet is like the back in any of them. Can you find out the names of some carpets used at home? How is rag carpet made?

LABORATORY EXERCISES

MAKING THE UNDERSLIP (*Continued*)

Textile study: Examine the samples of materials studied in lesson. Mount samples in Textile Book. Make one inch of twill weaving on your textile weaving-card. This is done in the following way. First row: under three threads and over three threads, under three and over three, across the row. The second row is begun by bringing up the needle one thread farther to the right than in the group over which the needle passed in the first row; then continue over three and under three, etc. Third row: the needle should be brought up one thread farther to the right than in the group over which the needle passed in the second row, then continue over three and under three, etc. This weaving forms a diagonal line of stitches that go over the warp threads. Can you find the diagonal in cheviot or serge?

Continue work on the slip.

REVIEW QUESTIONS

1. Name three materials for men's suits.
2. Name four light-weight materials used for dresses.
3. Name two materials suitable for dust coats.
4. Name two materials used for men's overcoats.
5. What is the difference between cheviot and serge? Between broadcloth and "ladies' cloth"?
6. How is flannel used?
7. What is a standard material? A novelty material?
8. Is it wise to buy novelty materials? Why?

EMBROIDERY TO USE ON UNDERWEAR

All embroidery on cloth was originally done by hand. Now only a small part of the embroidery used is hand-made, as we have machines that can imitate hand embroidery on cloth. Perhaps you know some one who has a piece of old hand-made embroidery that you can examine. The stitches are beautifully made, and some of them are very tiny. This kind of sewing was very slow work, and if all the embroidery were done by hand to-day we could not use it as freely as we do on underwear, dresses, and waists. When we have time, beautiful garments can be made by decorating them with hand embroidery, provided the design is well selected and the work neatly and evenly done.

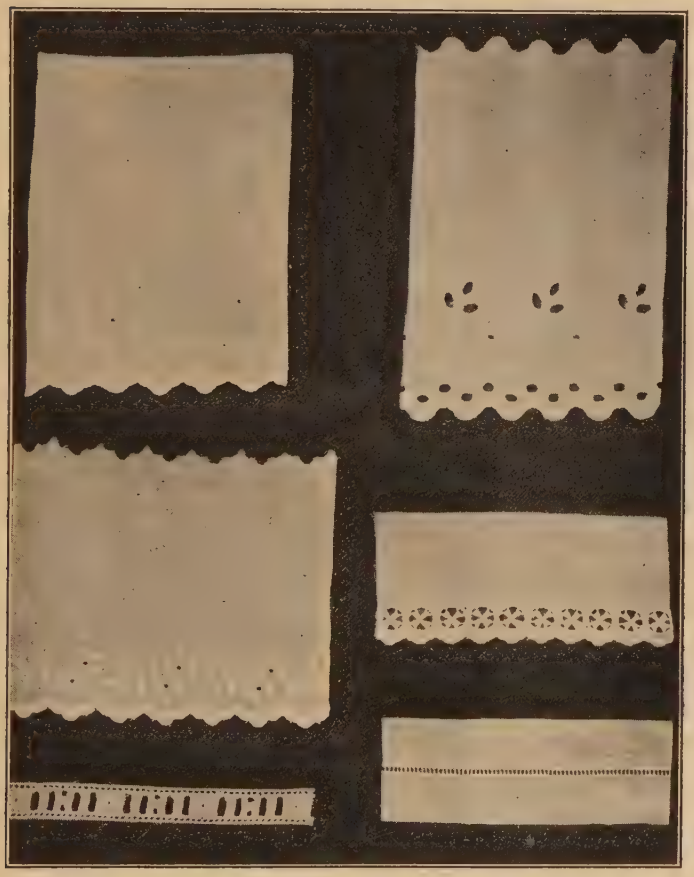
Machine-made cotton embroideries are made on cambric, batiste, nainsook, and Swiss. Cambric and nainsook embroideries are generally used for underwear, because the material on which the embroidery is made is the same in weight as the cloth from which the garment is made. Swiss and batiste embroideries are used in trimming dresses and waists that are made of such materials as organdie, Swiss, batiste, lawn, or dimity.

The term embroidery includes embroidery edging, insertion, and beading. *Entre deux* is a very narrow insertion, called "seam beading" because it is used between the two edges of cloth that are to form the seam. This is made in the same materials as embroidery edging, and also in voile.

Embroidery edging is usually finished with one edge in embroidered scallops, and the other a raw edge. Sometimes the finished edge is made with a machine-hemstitched hem instead of the scallops.

In selecting an embroidery edging, one should look

at the edge of the scallops to see whether they are well finished. Several strips of embroidery edging are



EMBROIDERIES OF GOOD DESIGN AND QUALITY

AT THE LOWER RIGHT-HAND CORNER IS A SAMPLE OF *entre deux;* AT THE LEFT IS A SAMPLE OF BEADING

woven on one piece of cloth, and when finished the strips are cut apart and are also cut along the edge of

the scallops. Sometimes the thread that finishes the edge of the scallops is broken or cut; in this case the edge will be apt to fray out after the embroidery is laundered. Always select an edging with a firm, uncut scallop.

Either insertions or edgings that are made with open-work designs in which heavy parts of the pattern are held together with fine thread are not best to select when one wishes the embroidery to wear well. Embroidery made in simple designs, instead of very elaborate or poorly constructed designs, is always the better selection. Cheap embroidery spoils the appearance of a garment and lessens its value because it will very soon become shabby in appearance. If one cannot afford to buy good embroidery, it is better to use none at all and to finish the garment in some other way.

Insertion is usually sold with a strip of the cloth left on each side of the insertion. Sometimes the edges are both finished with a scallop such as is used on the edging.

Beadings are sold with a strip of the cloth down each side of the beading. They come in various widths.

Embroidered material used in making waists and yokes comes in widths like cloth, and is called "all-over." Embroidery flouncings are wide embroidery edgings, often wide enough to make the length of a child's dress, underslip, or dress skirt.

HOME PROBLEMS AND QUESTIONS

Find any samples of embroidery that you can to bring to school. Get prices of as many as possible.

LABORATORY EXERCISES

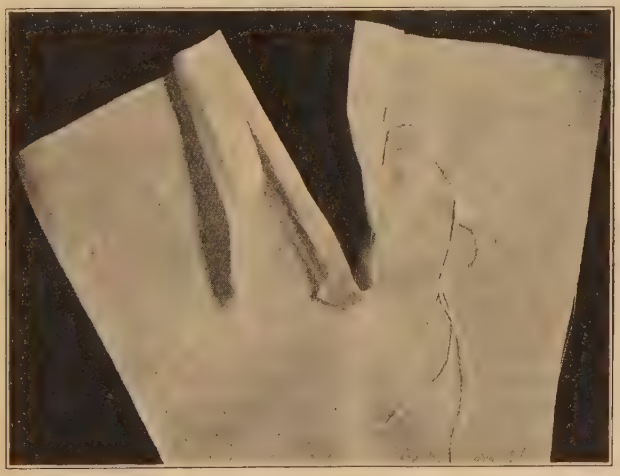
MAKING THE UNDERSLIP (*Continued*)

Textile study: Examine samples of embroidery. Which kinds are good to use with long cloth? Which are of the

best design? Why? Examine the scalloped edge. Mount samples in Textile Book. Look in the encyclopedia and see what you can find about hand-made embroidery. Write a story on this subject to read at school.

Method of Making Backstitching

To make the placket in the underslip: There are several kinds of plackets that may be used for the slip and on petticoats. One of them is the hemmed placket. Down one side of the placket make a one-fourth inch hem, running



Method of Making the Continuous Placket — Bound and Faced

the hem to a point at the bottom of the placket. Down the other side make a hem three-fourths inch wide, running it down straight. Lap the wide hem over the narrow hem and make two rows of backstitching across the bottom

on the right side and through both hems. A hemmed placket cannot be used if the slip is exactly the right width across the back. Why not?

Backstitching is made by taking one running-stitch over and one under the cloth; then bring the needle back and put it in the hole made by the end of the first stitch, and bring it out the distance of one stitch beyond the end of the second stitch. Pull the thread through. Bring the needle back and put it in the hole made by the end of the second stitch; then bring it out the distance of one stitch beyond the end of the third stitch and pull the thread through. Repeat until the work is completed. Always work on the right side of the material. Why? Backstitching on the right side looks like machine-stitching.

The Finished Placket

Another placket which may be used is the *continuous placket,* bound and faced. Cut a lengthwise strip of material twice the length of the placket and twice the desired width, allowing for seams. Place right side of facing to right side of garment. Baste in a very narrow seam, about one-fourth inch, down and up the sides of the placket. At the bottom of the placket run the seam to a point, making it as narrow as it will hold. Stitch seam, remove bastings. Turn under the other edge of facing one-fourth inch. On the side of the placket to be used for the buttons baste this folded edge along the line of stitching, so that

the raw edge of the seam is inside. The part of the facing that is to be used for the buttonholes should have the under part cut out, as in the picture. Then baste this side of the facing flat to the garment. Hem the entire length of the placket by hand. Lap the top of the placket over the bottom; baste across the lower end of placket, and stitch across the end as shown in the picture.

Practice making the plackets. Make one of the plackets on the slip, making the placket-opening of the length indicated by the pattern.

Estimate the amount of embroidery edging needed for the bottom of the slip. Buy edging four inches, or not more than six inches, wide.

REVIEW QUESTIONS

1. How is embroidery made?
2. What kinds of embroidery are suitable for underwear? for thin dresses and waists?
3. What points should be noticed in buying embroidery edging?
4. What is *entre deux?*
5. How is insertion used on a garment?
6. What is embroidery flouncing?
7. If embroidery edging were not used, how could the slip be finished around the bottom?

KNITTED UNDERWEAR AND STOCKINGS

Knitted underwear and stockings are made on special machines which loop the threads together instead of weaving them. The knitting may be plain or ribbed, or both kinds may be used in one garment. In using both kinds, one must take the garment from one machine, in which plain knitting is done, and put it into another to do the ribbing. The ends of sleeves and the legs of drawers in underwear are often finished in this way.

Knitted goods ravel out badly when a stitch in the garment is broken, and for this reason stockings and

underwear should be mended as soon as the break appears and before it has raveled and become a large hole.

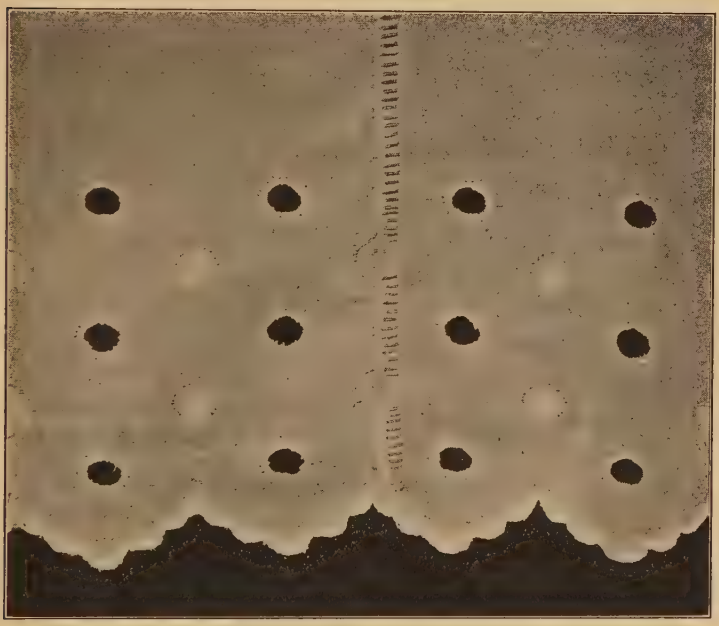
Stockings are made in different ways. The cheapest stockings are made by knitting one long tube and cutting it into desired lengths, after which the heel and toe are sewed and the stocking is shrunk into shape. The best stockings are knitted in a flat piece, shaped exactly as desired for the stocking, and the shaped piece is sewed together on sewing-machines made for the purpose. This seam runs down the leg of the stocking and along the bottom of the foot to the toe. This stocking is called "full-fashioned." Stockings are made of cotton, wool, silk, or lisle, which is an especially prepared cotton thread. Cotton and lisle stockings or socks are commonly worn by boys and girls; silk are the most expensive and not suitable for hard usage. Wool stockings are worn in winter.

Some stockings are made from artificial silk, called rayon, which is a product made in several ways and is used to imitate true silk. The best grades of artificial silk stockings wear better than the poor or medium grades made of true silk, and cost much less. Artificial silk is also used in making dress materials, sweaters, neckties, ribbons, and dress trimmings. It can usually be distinguished by its high luster.

The usual kinds of underwear are made of cotton, wool, and silk, or of combinations of cotton and wool, or of silk and wool. Knitted underwear, to be warm, must be loosely woven. The open mesh of the weave holds air in the material and makes the garment a warmer one because the heat from the body does not pass so easily through this still air. The loosely woven material also permits plenty of air to remain next to the skin. Two loosely woven garments, one over the

other, keep the body warmer than one very heavy, tightly woven garment, because of the air space between them.

Knitted underwear absorbs the moisture given off by the body and must be made of material that will take up and give off the moisture quickly. Wool takes up



Method of Joining Embroidery, Showing Buttonhole Stitch Used in Finishing the Seam

the moisture quickly. Cotton knitted underwear is often loosely woven and so treated that it absorbs readily.

Any garment worn next to the skin must be laundered often to remove the secretions and dirt given off from the body. A dirty garment loses its power to

absorb, and when moisture is left next the skin it makes the skin feel cold and uncomfortable.

Wool is warm, but many people find it irritating to the skin. Wool is hard to launder because it is apt to shrink and become harsh when the washing is carelessly done. A wool and silk combination is excellent for

Right Side of "Join" in Embroidery

winter underwear, but it is very expensive. Cotton is often used for knitted underwear, and while it is not so warm as wool it is much liked by many people, and is much easier than wool to launder.

The kind of underwear worn depends on the climate, health, occupation, and age. In houses kept at summer temperature in winter, it is unwise to wear underwear that is too warm. It is better to wear warmer wraps

when going out of doors than to keep the body too warm while in the house. The union suit is a garment that covers the body evenly all over, which is perhaps better for many people than to wear the drawers and shirt which make a double thickness over the abdomen.

At night always hang up the underwear so that it can air thoroughly. Never sleep in underwear worn during the day.

HOME PROBLEMS AND QUESTIONS

Can you find out the price of the stockings you are wearing? Of what are they made? Are they ribbed or plain? Find a full-fashioned stocking and bring it to school. What does a winter union suit cost? Of what is it made?

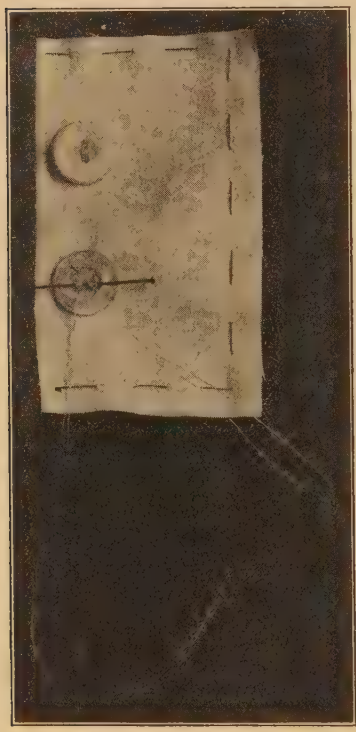
LABORATORY EXERCISES

MAKING THE UNDERSLIP (*Continued*)

To join embroidery: Match the pattern in the ends of the embroidery, either between the scallops or through the middle of a scallop. Sew in a plain seam. Buttonhole along the raw edges instead of overcasting. Follow directions given below for making buttonhole stitch. Find the middle of the length of the ruffle, measuring from the seams, and mark with a pin. Begin at the seam and gather to the pin. Gather the other half on another thread. Follow the directions for gathering given below.

To sew on a button: A button is sewed on in the following manner. Use a double thread in the needle. Determine the place for the button and put a pin at the point where the center of the button is to be placed. At this point begin with the knot on the right side of the material; run the needle through a hole in the button, place a pin over

the top of the button, and sew over it; bring the needle down through the opposite hole in the button and through the cloth to the wrong side, then up through the first hole, and repeat the process three or four times. Remove the pin and wind the thread around the stitches under the button, run the needle through to the wrong side, and fasten with two or three stitches, one over the other.



METHOD OF SEWING ON A BUTTON

THE LOWER BUTTON HAS FOUR HOLES AND THE THREADS ARE CROSSED IN SEWING IT ON

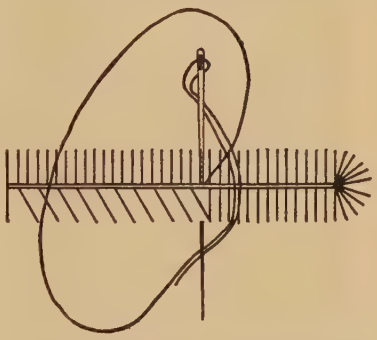
Measure exactly where the buttonhole should be placed, and mark with a pin.

To make a buttonhole: The buttonhole should be just large enough to slip over the button easily. The buttonhole may be cut with the buttonhole scissors, or by folding the material across the point where the middle of the buttonhole is to be and cutting through the cloth from the fold, a distance of one half the length of the buttonhole desired. Cut the buttonhole on a thread of the material.

The buttonhole must first be overcast.

Use a thread without a knot, and overcast the two sides of the buttonhole, beginning at the end farthest from the button.

Do not cut or fasten the thread when the overcasting is finished, but begin at the same point to make the buttonhole-stitch. Hold the material between the thumb and first finger of the left hand, with the buttonhole running parallel with the first finger. Place the needle and thread in the position shown in the illustration, pull the needle through, drawing it at right angles to and toward the cut edge of the buttonhole. A small loop or knot called a "purl" will be formed on the edge of the buttonhole. This prevents the edge of the buttonhole from wearing out or losing its shape. Continue with the buttonhole stitch, placing the stitches close together until the end is reached. This is the end nearest the button. To finish this end, continue making the buttonhole-stitch around the end, letting the purls all come together at one point. It takes about five stitches to do this, and when it is finished the needle should be in a position to continue the buttonhole-stitch down the second side. This is called a "fan" end. Turn the buttonhole so that the unfinished side is in the right position for making the buttonhole-stitch. Continue the buttonhole-stitch until the other end is reached. This end is to be finished with a "bar." This is made by taking two or three stitches across the end and extending them the width of the buttonhole-stitches. The bar is finished by making the blanket-stitch over these threads and through the cloth. This stitch is done from left to right, the needle and thread being placed in the position shown in the picture on page



METHOD OF MAKING BUTTONHOLE-STITCH

OBSERVE THE "FAN" AT THE RIGHT-HAND END OF THE BUTTONHOLE

395. Make the stitches close together. Run the needle through to the wrong side and fasten with two or three little stitches, one over the other, being sure that they do not show on the right-side. The result should be a perfect buttonhole.

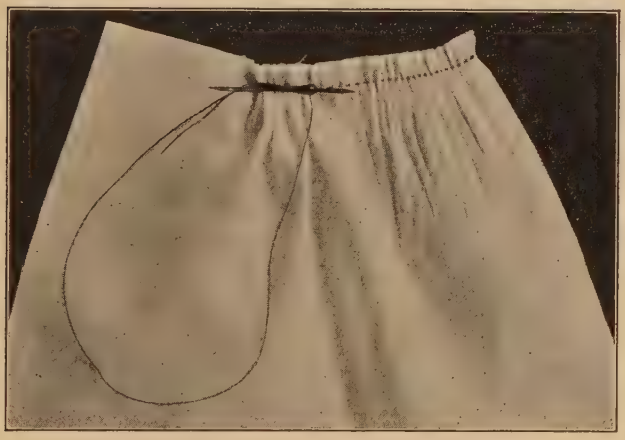
STEPS IN MAKING A BUTTONHOLE, BEGINNING AT THE BOTTOM

FIRST, THE OVERCASTING OF RAW EDGES; THEN THE MAKING OF THE BUTTONHOLE-STITCH AROUND THE BUTTONHOLE; FINISHING AS INDICATED BY THE BUTTONHOLE AT THE TOP

Practice making buttonholes. One-eighth-inch checked gingham is good to use for practice work until the work can be done evenly. When you can do the buttonhole-stitch evenly, finish the raw edge of the seam in the embroidery.

Gathering: Gathering consists of small running-stitches with the thread so drawn as to full the material. Gathers must be "laid." To do this, fill the needle as full of stitches as possible, then draw the material together. Wrap the thread around the needle in such a way that the material is held firmly, then pull down on the material, holding the needle firmly between the thumb and first finger of left hand, doing the pulling with the right. When the cloth is creased so that the gathers stay in place, unwind the thread and pull

the needle through the material. Repeat with each needleful. Gather on a single thread, being sure that there is a good knot in the end of the thread. When the gathering is finished, cut the thread without fastening, leaving it longer than the space in which the gathers are to fit.



GATHERS READY FOR PULLING INTO PLACE

NOTE HOW THE CLOTH IS CREASED WHERE THEY HAVE BEEN PULLED

Make a knot in the end of the thread. Gather the ruffle for the underslip. Begin at the seam and gather half of the length on one thread; use another thread for the other half.

REVIEW QUESTIONS

1. How is knitted underwear made?
2. How are cheap stockings made?
3. How are full-fashioned stockings made?
4. Of what materials is knitted underwear made?
5. How should we decide upon the kind of underwear to use?
6. Why must underwear be changed often?
7. How should underwear be cared for at night?
8. Can you name any other knitted articles made by machine?
9. How is the ruffler on the sewing-machine regulated to make a ruffle fit a given space?

THE BUDGET AND THE COST OF CLOTHING

Have you ever thought about the cost of the clothing you wear, and also about how much money is required each year to buy it? Perhaps you have gone shopping with your mother and have learned the price of some garments. Every family has to spend money every year for clothing, but the amount spent varies with the size of the family, the needs of the family, the amount of the income, and the judgment of the person spending the money. Every one must have a place to live, food to eat, and clothing to wear. In addition, there must be money to spend for books, music lessons, carfare, coal, and many other necessities. Besides this, some money should be saved every year.

The wise home-maker, therefore, makes a plan for spending the money available each year, or the income, as it is called. This plan will show how much is to be spent for food, for clothing, for shelter, for running or operating expenses, and for entertainment, education, church, charity, and savings. When such a plan is made, it is called a "budget."

In order to know just how much money is actually spent each month, and during the entire year, a record of expenditures is kept, and this record is called a household account. At the end of the year, by checking up this household account, one can find whether more or less money has been spent for each division than the amount planned in the budget.

Many persons spend more money for clothing than is necessary because they do not buy wisely; they select materials and garments that do not wear well, that fade, that are not suitable for the purpose, or that do not launder well. Persons who are careless about

the care of their clothing spend more money than those who keep their clothing repaired, pressed, and clean. Every girl should remember that her clothing is expensive, and should consider it her duty to take as good care of it as possible.

In order to realize the cost of clothing, it would be well for each girl to keep an account of the money spent for her clothing each year, even though she does not buy it herself. Such an account will be begun in the "Clothing Book." Perhaps each member of the class will continue keeping it, so that when she begins buying her own clothing she will know the usual price of each article.

The buying of "fads", exaggerated styles, or novelty materials is not wise when clothing must be worn for very long periods. Fads in clothing go out of fashion quickly and must be discarded. The better plan is to select standard materials of good quality and then have the garments made in such a way that they may be worn two or even three years without being out of fashion.

Ready-made garments often cost more and wear a shorter period than do garments made at home. Sometimes, however, it is a wise plan to buy ready-made clothing, especially when one is busy and when energy and strength must be saved for the daily work.

HOME PROBLEMS AND QUESTIONS

Make a list of all the articles of clothing you have. Ask your mother to tell you the price paid for each article, if possible. Which garments, if any, are to be worn more than one year? What is the total amount spent for your clothing?

LABORATORY EXERCISES

MAKING THE UNDERSLIP (*Continued*)

Textile study: Make a booklet consisting of several sheets of plain white paper with a cover of brown or other colored paper. Decorate this cover in any way you wish, making the title "The Clothing Book." When you have completed your list of clothing with the costs, put the items in the book in this manner:

Shoes

1 pr. high shoes for school	$ 5.00
1 pr. best shoes	5.00
1 pr. pumps	4.00
1 pr. rubbers	1.00

Hats

1 school hat	3.50
1 best winter hat	5.00
1 best summer hat	5.00
1 sun hat	1.00

Dresses

1 gingham dress (made at home)	3.00
1 percale dress (made at home)	2.00
1 serge dress (ready-made)	12.00

Continue until the list is complete.

To finish the bottom of the slip: Try on the slip and straighten the lower edge by marking an even distance from the floor around the bottom of the slip, using a yardstick to measure up from the floor. After taking off the slip, trim off around the bottom by following the marks. Make a hem two inches wide. In basting down the hem on the curve, it may be necessary to lay some tiny pleats; do this by straightening out the folded edge, making the pleat, and then folding down the edge across this pleat. Stitch the hem by machine, thus finishing the bottom of the slip.

To put on the ruffle: The ruffle is to be put on with a tuck. Measure up from the bottom of the hem on the slip the width of the ruffle; mark with a pin; three-eighths inch above this pin make a second marking. Measure from this second mark to the bottom of the hem; what is the length of this measurement? Measure up this distance from the bottom of the hem on the slip; mark with a pin; measure up from the bottom of the hem every four or five inches, so that you have a row of pins around the slip. Make a fold along these pins, folding so that the crease is on the right side of the slip; baste; three-eighths inch from the fold just made, stitch on the machine around the slip so that a tuck will be formed when the work is finished. Use the gauge on the machine when making this tuck. Remove bastings.

METHOD OF STRAIGHTENING THE LOWER EDGE OF THE UNDERSLIP

Place the seam in the ruffle at the middle of the back of the slip so that the bottom of the ruffle is even with the bottom of the slip, with the raw edge at the top under the tuck; pin; the point where the two gathering threads meet in the ruffle should be pinned to the middle of the front of the slip and under the tuck. Pull the gathering

into place and fasten. How will you do this? Pin the ruffle to the slip at several places around the slip, being sure to divide the gathers evenly. Baste with one-fourth-inch stitches along the gathers, keeping the line of stitching straight.

Bring the tuck down over the raw edge of the ruffle so that the fold of the tuck just covers the gathers; baste

Method of Putting Ruffle on with a Tuck

with one-fourth-inch stitches just a little above the fold of the tuck and through the tuck, ruffle, and slip. Stitch by machine along the fold of the tuck.

When the dress has little fullness around the bottom, it is better to make the slip without a ruffle. The bottom of the slip may be finished with a plain hem or with a narrow lace edging overhanded on to the edge of a very narrow hem.

REVIEW QUESTIONS

1. What is a budget? A household account?
2. Why are both useful to the home-maker?
3. Why should girls keep an account of the cost of their clothing?
4. Why do persons often spend more for clothing than they should?
5. What is a "fad"? Should most people buy fads? Why?
6. How may clothing be made to wear a long time?
7. When may ready-made garments be wisely bought?

THE CARE OF CLOTHING

The length of time a garment may be worn can be very much increased by proper care. Good care of clothing requires that some thought and energy shall be used every day, but since a well-cared-for garment wears longer and always looks better, the effort is worth while.

When garments are taken off they should be well aired before they are put away. Hang waists over chair-backs, and underslips, bloomers, underwear, and stockings over chairs at night, so that they are well aired by morning. Never throw down in a heap clothing that is to be worn again, because crumpled clothing does not look well. Dresses should be placed on hangers and hung in the closet, leaving the door of the closet open during the night.

When garments are to be put away they should be so arranged that they will be wrinkled as little as possible. Coats and dresses should be kept on hangers. Skirts may be kept on hangers, or may be hung up by two loops of tape, one on each side of the skirt at the band. The loops should be hung over hooks arranged at such a distance apart that the band hangs straight. Waists should be folded straight and laid in drawers or boxes. Do not pack too many waists in one drawer, as this is apt to crush and wrinkle them. Cover-bags may be used over dresses or coats that are not often worn. These bags will protect the garments from dust and dirt of various kinds. A cover-bag is described in the section on Christmas Gifts.

Wool clothing should be brushed often, and spots should be removed as soon as possible after they are discovered.

Cotton and linen clothing must be washed carefully. The color should be "set" in a material before it is laundered the first time. Salt, vinegar, and sugar of lead are materials used for setting colors. Perhaps you can find the method of doing this in some of the bulletins or books in the library. Colored materials should not be hung in the sun to dry.

There are on the market at the present time colored wash fabrics that are guaranteed to be "sun-proof and tub-proof"; these are very good to use for garments that are to be laundered often. It is not necessary to "set" the color in these before laundering.

Wool skirts, coats, and suits should be pressed often enough to keep them fresh in appearance. A wrinkled skirt, with the pleats out of shape, can never look well, and the person wearing such a garment is not well dressed. In pressing wool, if the material is pressed on the right side, a cloth is always used between the material and the iron. The cloth is usually dampened and placed over the material, and the cloth is pressed until it is dry. The pressing may be continued on the wrong side. Much practice is necessary before pressing can be done well. Garments may be sent to pressing and cleaning establishments to be pressed, but this is expensive, and many garments can be pressed at home and look well if the work is carefully done.

Hooks and eyes, snap fasteners, and buttons should always be sewed on as soon as they come off the garment. A skirt or waist that is pinned together looks very untidy, and an untidy person is never a well dressed person.

Stockings should be mended neatly and never worn with holes in them. Garments that need patching should be mended carefully, and before they are laundered, if possible.

Hats should be brushed with a soft brush to remove the dust, and when worn only occasionally should be kept in a box or drawer away from dust.

Shoes that are kept clean and polished wear longer and look neater. When heels become worn and uneven, the shoes should be taken to the repair shop to have the heels straightened, for "run-down" heels look very untidy. Shoe laces should not be used after they are broken. Knots in the laces spoil the appearance of the shoes. Shoe buttons should always be replaced as soon as they come off. Rubbers that are muddy should be washed before being worn again.

Every girl wishes to look well dressed, and to effect this, every garment must be neat as well as becoming. No garment looks neat unless it is well cared for. Every girl should form the habit of keeping her clothes in good condition, and should learn to do the work herself.

HOME PROBLEMS AND QUESTIONS

Ask some one to show you how to press your wool skirt or dress. Perhaps you can do this at school, with the help of the teacher. Remember to use a piece of cloth between the wool and the iron. Wear the skirt or dress to school for inspection.

Bring to school a stocking that needs darning.

LABORATORY EXERCISES

MAKING THE UNDERSLIP (*Continued*)

Darning a stocking: Lay aside the slip and practice darning the stocking you have brought from home. Trim around the edge of the hole so that there are no ravelings and the edge is even. Use four-strand darning-cotton and a darning-needle. For heavy stockings two strands of darning-cotton should be used, but for fine stockings use a single

strand. Do the darning on the right side. Begin far enough from the hole so that the worn places around the hole, if any, are covered with the first rows of running-stitches. Begin about one-fourth inch from the hole, or farther away if the stocking is worn.

Make running-stitches back and forth in rows close to each other; make the rows of different lengths. Leave a loop of thread at the end of each row; this allows for the shrinkage of the thread and prevents the darn from drawing up after it is laundered. When the hole is reached, make a few running-stitches up to the hole, then extend the thread across the hole and continue with running stitches; turn and repeat, keeping the rows close together, with the edge of the hole *under* the threads that run across the hole. Continue the rows of running-stitches beyond the hole in the same way as in beginning.

Method of Making Stocking Darn

Turn the darn so that other rows of running-stitches are made across the first rows, and weave the thread under and over the threads covering the hole, as in plain weaving, finishing each row with running-stitches. Repeat until the hole is filled, keeping the threads close together. A darn should be smooth, so that it will not hurt the foot, and when made with one or two strands of darning-cotton it will not be uncomfortable to the wearer.

Darn one pair of stockings a week at home until the end of school. Bring them to school for inspection and comparison with the darning done by others in the class.

To sew on hooks and eyes: Sew over and over the circular ends and through the fabric all around the hook, and tack flat to the fabric by taking three or four long stitches across the other end of the hook; fasten the thread with two or three small stitches against the side of the hook. The stitches should show as little as possible on the right side of the fabric. In order to make a very neat finish, the hooks may be sewed on with a buttonhole stitch around the circular ends.

The eye must be placed so that it meets the hook in exactly the right position. It is fastened to the fabric by the same method as is used for the hook. Each side of the eye, like the one in the picture, is fastened flat to the fabric with three or four over-and-over stitches, taken over the side of the eye and through the cloth; fasten the thread with two or three small stitches against the side of the eye.

Snap Fasteners

At the top of the picture are snap fasteners sewed on correctly. The upper hook and eye is sewed on with the buttonhole stitch. The lower one has been sewed on with the over-and-over stitch.

To sew on snap fasteners: Sew to the fabric with three or four over-and-over stitches taken through the holes on the

edge of the fastener and through the cloth. Fasten the thread with two or three stitches against the side of the fastener. Do not draw the stitches too tight when sewing snap fasteners on to a wash fabric. Why?

Buy rust-proof hooks and eyes or snap fasteners when they are to be used on wash fabrics.

Continue work on the underslip.

REVIEW QUESTIONS

1. Why should clothing be carefully looked after and repaired?
2. How should garments worn during the day be cared for at night?
3. What is the best method to use in hanging clothing away?
4. How should wool clothing be cared for?
5. How should colored materials be treated before laundering?
6. How should shoes be cared for?
7. How much of the work of caring for your underclothing do you do yourself?

REMOVING STAINS

Stains not only make a garment look badly, but often make it practically useless. With care many stains can be removed without injury to the cloth. Stains are more easily taken out of wash materials before they are laundered. If one knows what has caused the stain it is always easier to remove it, because different stains are removed in different ways.

To remove stains successfully it is necessary to use the right kind of equipment. This should consist of granite or earthenware bowls, probably one large and two small ones will be enough; some medicine-droppers which may be bought at the drug-store; and bottles in which to keep the various stain-removers. Stains are very difficult to remove from colored materials because in many cases the color is injured in doing the work. In removing many stains from white linen or cotton materials, a bleaching agent will have to be

used. Javelle water is one of the best bleaching agents, but it must be used carefully to prevent injury to the cloth. Javelle water is made as follows:

1 lb. sal soda	1 qt. hot water
½ lb. chloride of lime	2 qts. cold water

Dissolve the sal soda in the quart of boiling water. Put the chloride of lime in the cold water, allow the mixture to settle, then pour the clear liquid into the sal-soda solution. Put in a tightly corked bottle and keep in a dark place, for light and air cause it to lose its strength. When using, add an equal amount of clear water to the portion of Javelle water.

Another bleaching agent is oxalic acid. This is made by dissolving one ounce of oxalic acid crystals in three fourths cup of hot water. The crystals are purchased at the drug-store.

Some stains can be removed by using something that will absorb them and which is called an absorbent. Absorbents are used principally for removing grease stains. Those commonly used are blotting-paper, talcum powder, starch, French chalk, and fuller's earth.

Some stains can be removed by using a material that will dissolve them. These materials are called solvents. The most common solvent is water. Other solvents often used are gasoline, ether, and chloroform. Gasoline, ether, and chloroform should be used out-of-doors, or by an open window, and always where there is no fire.

The following methods may be used in removing some of the common stains:

Fruit stains in white wash material. Pour boiling water through the cloth; use a bleaching agent when necessary.

Coffee and tea stains on white wash material. When cream has been used in the tea or coffee, rinse with cold water; then pour boiling water through the stain; bleach if necessary. Stains made by clear coffee or tea should have boiling water poured through them without rinsing in the cold water; bleach if necessary.

Grass stains on white or colored material. Use cold water; if the stain is fresh, use soap and cold water. When on white wash materials, a bleaching agent may be used.

Ink stains. On white wash material use a bleaching agent.

Grease and oil stains. Use an absorbent; or warm water and soap; or a solvent.

Paint stains. Use chloroform or turpentine. An old paint stain on white material may be removed with a bleaching agent.

When removing a stain from colored materials, always test a sample of the cloth before using the stain-remover on the cloth. Sometimes the stain will show less than the spot that is left after removing the stain.

Wool materials, when stained very badly, should be sent to the "dry-cleaners." Grease spots can usually be removed successfully at home.

LABORATORY EXERCISES

MAKING THE UNDERSLIP (*Continued*)

Textile study: Remove an ink stain from a white cotton fabric. Stretch the material across the top of a small bowl, with the stain over the middle of the bowl; dampen the stain with water, using a medicine-dropper; apply the bleaching agent with the medicine-dropper; use a second dropper and apply clean warm water to the stain; use the bleaching agent again; rinse; repeat until the stain is removed; rinse

with a little ammonia in the water; rinse very thoroughly with clear water. Dry before pressing.

Remove a grease spot from a wool material. Place a layer of clean, white blotting-paper underneath the spot and one on top of the spot; press with a hot iron. Perhaps it will be necessary to try warm soap and water. Apply this with a piece of cloth or sponge; rinse with warm water. When using any other solvent than water, place the stain over a piece of blotting-paper on a flat surface and rub with a cloth or sponge dipped in the solvent; rub towards the center of the spot, as this helps to avoid the "ring" often formed around the spot. Sometimes rubbing the surface near the spot with a solvent, spreading it out over the surface, helps to remove the "ring."

Continue work on the underslip.

REVIEW QUESTIONS

1. What three groups of stain-removers are commonly used?
2. Give examples of each group.
3. Should a bleaching agent be used on colored materials? Why?
4. How may grease spots be removed from wool materials?
5. How should the following stains be removed from white wash materials: clear coffee, grass, paint, and ink?

HEALTHFUL CLOTHING

Every girl, at the present time, wishes to be healthy and strong. She wishes to be strong enough to enjoy tramping, playing tennis, riding horseback, sweeping, or hoeing in a garden, without being "worn out." No one can do any of these things easily unless the clothing she wears permits perfect freedom of the body and is comfortable in every way.

A healthy body is kept so by frequent bathing, by changing underclothing often, and by wearing suitable clothing. It is necessary to bathe the body oftener

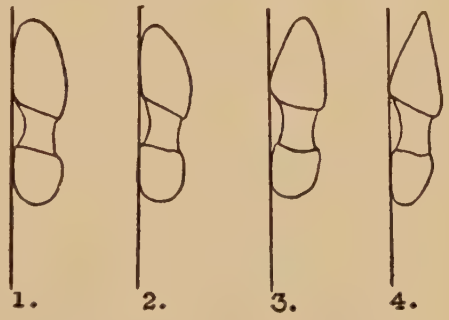
than once a week. Many people take a bath every day, and when one forms the habit of doing this one feels uncomfortable unless the bath is taken regularly.

Underclothing worn next to the skin should be changed two or three times a week if it is to absorb the moisture from the body readily and thoroughly. Underclothing should fit in such a way that it does not draw or pull at any point. Union suits are very uncomfortable if they are too small, and should not then be worn. Wool underwear that is carelessly washed shrinks and becomes harsh because the loose mesh and the fibers are felted together. Wool underwear should be washed in warm — never hot — water, with a mild soap, should never be rubbed but always squeezed to remove the dirt, should be rinsed in water the same temperature as that in which it is washed, should be squeezed — not wrung — and should be dried in a warm place, but not over a hot register nor close to a hot radiator or stove.

Stockings should be chosen to suit the temperature in which they are worn. Thin silk or transparent stockings worn in winter with low shoes are not healthful, because much body heat and energy is being wasted in keeping the body warm that would better be used for the necessary functions of the body. Then, too, a person never seems well dressed who appears cold and uncomfortable. Stockings should be changed very often, because the moisture from the skin of the foot soon soils the stocking and causes it to lose the power of absorption, thereby making the foot feel cold and damp. Some people change their stockings every day.

Shoes ought to be comfortable, which means that they must fit the shape of the foot, must be wide enough and long enough, and be made with comfortable

heels and soles. A shoe should fit the instep and heel snugly, should be straight on the inside line, should have a heel broad enough to balance the body well and a toe wide enough to give the toes plenty of space. A high narrow heel is not suitable when worn all the time, especially if one is to be on her feet a great deal; it causes "broken arches" and may make one nervous and cause pain. A shoe should have a sole thick enough to keep out dampness and to make walking easy. In stormy weather galoshes or rubbers keep the feet dry and also prevent the rotting of the thread used in making the shoe.



Shoes 1 and 2 Conform to the Natural Shape of the Foot; Shoes 3 and 4 Distort the Natural Shape

Tight bands around the waist or above the knees are not only very uncomfortable but may cause ill health. No one looks well in tight clothing. A fleshy person who wears tight corsets and bands pushes the body into such a position that the flesh shows more than it would if the waist were left the normal size.

Wearing too much clothing is as unhealthful as wearing too little. Select the amount and kind that will suit the climate, the age, the work one is doing, and the state of health. Sick people and old people require more clothing than young people who are strong and well. A person working out of doors in winter requires more clothing than a person who works in the house all day. Remember that clothing has a great deal

to do with the state of health, and that it should be selected very carefully if the body is to be kept in a healthy condition.

LABORATORY EXERCISES

MAKING THE UNDERSLIP (*Continued*)

To finish the neck and armholes of the slip: The neck may be finished with narrow embroidery edging, about one inch in width. Select a pattern that matches or looks well with the pattern in the embroidery used in the ruffle. Enough embroidery edging should be purchased to go one and one-third times around the neck and each armhole. How will you measure for this amount? Divide the embroidery into three pieces — one for the neck and one for each armhole. How will you do this?

METHOD OF BASTING BIAS STRIP AROUND ARMHOLE

Make a one-eighth-inch hem on each end of the piece for the neck. Gather ruffle one-fourth inch from the edge. Join the ends of each piece for the armholes, using the same joining as used in the ruffle. Gather each one-fourth inch from the edge.

Trim around the neck and armholes. Find the middle of the length of the embroidery for the neck, and pin this to the neck of the slip at the middle of the front so that the right side of the embroidery is against the right side of the slip, and the raw edges are together. Pin the ends of the strip to the ends of the neck in the same way. Pull the gathers into position; fasten the gathering thread; divide the gathers evenly around the neck, and pin into place at several points. Baste ruffle to slip along line of gathering.

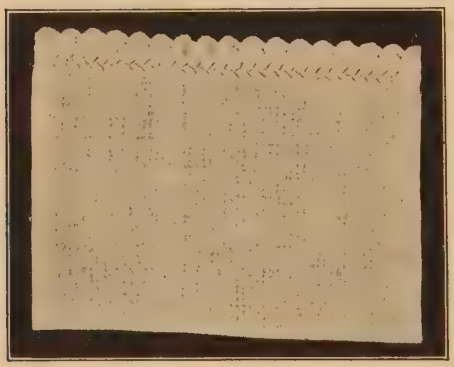
Cut a bias strip of the material one inch wide, as you did for the bias casing. Begin at the back of the neck, place the edge of the bias strip even with the raw edge of the seam just made, with the bias strip on top of the embroidery; baste along the line made by the first seam, holding the bias strip slightly fulled instead of stretching it. This will make a seam of three thicknesses of cloth. Stitch the seam by machine. Remove bastings.

Turn in the other edge of the bias strip one-fourth inch toward the wrong side. Turn the bias strip down on the wrong side of the slip, drawing it down smoothly from the seam, and baste along seam edge to hold in place. Baste the folded edge of the facing to the slip. Perhaps you will have to stretch the folded edge a little to make it lie smoothly. Turn in the ends of the bias strip and overhand the folded edges to the edges of the placket. The bias strip may be stitched on the machine along the folded edge, or it may be held in place with featherstitching done on the right side of the underslip along the folded edge of the bias strip.

Finish the armholes in the same way. The seam in the embroidery should be joined to the slip at the under-arm seam. When basting the bias strip in the seam with the embroidery, it may be necessary to hold it a little fuller than you did around the neck, because the armhole is more curved.

Other finishes for the neck and armholes of the underslip: (1) *Stickerei* is a narrow tape with embroidered scallops, either white or colored, on one edge and a selvedge on the

other, and is used in finishing undergarments; the better grades are sometimes used to finish house dresses and children's clothes. To finish the neck and armholes of the underslip with stickerei, trim the neck and armholes; finish one end of the stickerei with a one-eighth-inch hem, with the fold of the hem between two scallops. Place the hemmed end at the edge of the placket, with the right side of the stickerei against the right side of the underslip, and the selvedge edge of the stickerei even with the raw edge of the material; baste the two together, holding the stickerei quite full around the curves. Cut the stickerei at a point one-fourth inch beyond the end of the neck, and make a one-eighth-inch hem to finish the end. Stitch by machine, one-fourth inch from the selvedge edge; remove bastings. Trim off about one-sixteenth inch of the raw edge of the material; turn the selvedge edge of the stickerei down on to the slip, creasing the underslip material so that it is drawn neatly back from the machine stitching; baste the selvedge edge of the stickerei down to the material, making the basting one-eighth inch away from the selvedge. Stitch by machine along the selvedge edge, or fasten the stickerei down with featherstitching done on the right side of the garment.



STICKEREI FASTENED DOWN TO THE MATERIAL WITH FEATHERSTITCHING

(2) *Bias binding* or *facing* is purchased in bolts and comes in several widths. To make a simple finish around the neck and armholes of an underslip, baste the bias binding to the underslip with the right sides together, the raw

edges even, placing the basting stitches just above the fold in the bias binding. The binding must be held slightly full at the curves. Stitch by machine on the crease in the bias binding; remove bastings. Turn the bias binding down on to the wrong side of the underslip and crease along the fold of the seam, being careful to draw the underslip material evenly from the seam. Turn in the ends of the bias binding so that the raw edges do not show. Baste along the folded edge of the seam, through the binding and the slip. Baste the other folded edge of the bias binding down on to the slip, stretching if necessary around the curves; stitch by machine; remove bastings.

STICKEREI FASTENED TO THE GARMENT WITH MACHINE STITCHING

A PRACTICAL FINISH FOR EVERYDAY UNDERWEAR

When desired, the binding may be fastened down with featherstitching instead of machine stitching.

To fasten slip on shoulders: Instead of making the slip with seams on the shoulders, it is sometimes finished to lap and button on the shoulder as shown in the illustration on page 418. In cutting out the slip, add 3 inches to the length of the shoulder on the back of the slip, which will be needed to make the lap over the front in fastening. This lap is usually rounded on the end. To finish the shoulder to lap and button, each end must be faced. When you cut out the slip, cut a facing three inches deep and the shape of the slip on the back and front at the shoulder seam. How will you do this?

Make a one-fourth-inch hem on the bottom of each facing piece. Place on wrong side of slip, even with the shoulder, the wrong side of the facing next to the wrong side of the slip. Baste into position so that the raw edges are even. Then sew on the stickerei as described above, extending it around the curved ends of the lap. When basting the stickerei down to the slip on the curved shoulder lap for the second stitching, it will be necessary to full in the selvedge edge around the curve; this should be basted very carefully before stitching (see illustration). No placket is needed when the underslip is fastened on the shoulder.

THE WRONG SIDE OF THE SHOULDER LAP

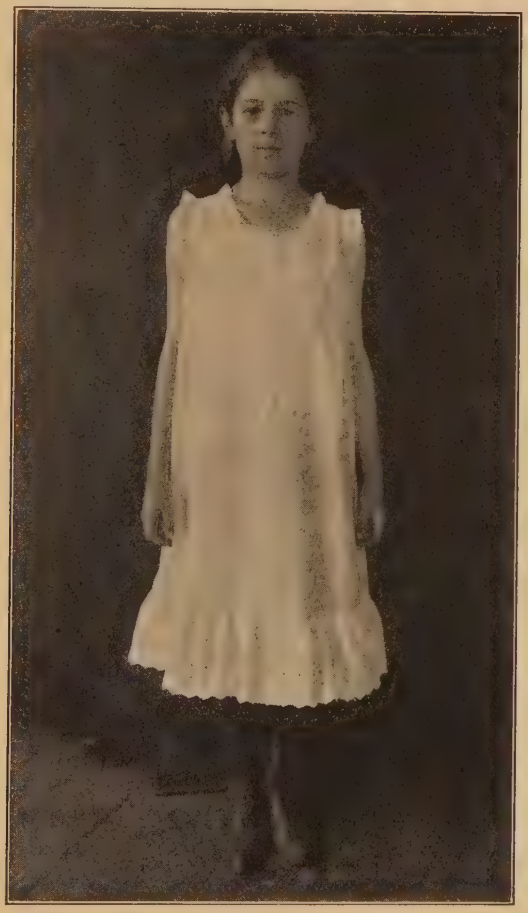
SHOWING THE FACING AND THE METHOD OF FULLING IN THE STICKEREI AROUND THE CURVED END. THIS STICKEREI HAS BEEN FASTENED TO THE MATERIAL WITH MACHINE STITCHING

Lap the back over the front of the slip as directed by the pattern, if you are using one with this type of shoulder, or lap the back over the front until the armhole is a comfortable size. Fasten with one or with two buttons and buttonholes. By moving the buttons up nearer to the shoulder line the slip may be lengthened. What happens to the armhole when you do this?

What other finishes have you seen used to finish the necks of underslips?

To fasten the underslip: Sew on two or three small buttons down the placket, making buttonholes to match.

To shorten the underslip: It is sometimes desirable to make the slip in such a way that it can be lengthened. It can be made an inch or an inch and a half longer than needed,



THE FINISHED UNDERSLIP

and then made the right length by taking one or two tucks just above the tuck for the flounce, or above the hem when there is no flounce on the bottom. These tucks can be let out when the slip needs lengthening. Use the tucker on the machine for doing this. Follow the directions given for gauging the width of tucks as given in the machine book of directions.

REVIEW QUESTIONS

1. What effect does clothing have on health?
2. What points should be remembered about underwear for the healthy person?
3. How should wool be washed?
4. Discuss stockings in relation to health.
5. What kind of shoe should be selected?
6. Should tight clothing be worn? Why?
7. What things must be considered when selecting clothing that will be best for you to wear?

SELECTING A WASH DRESS

When one selects material for a wash dress there are several things to be remembered: (1) Is it a becoming color? (2) Is the design in the cloth right for the figure? (3) Will it launder well? (4) Will the material wear well?

A wash dress has to be laundered often, therefore a material that shrinks badly or that is poorly dyed is not a good selection. Our study of textiles has shown that some cotton cloth is loosely woven, that it is often made of cheap fiber, and that it may have sizing added. When selecting a wash-dress material, the best plan is to test a sample at home before buying the material. Test it by washing in warm, soapy water, drying and ironing. If the material shrinks or fades badly it is not a wise selection for a wash dress. It should not fade in the sun. Cover one half of the sample with a piece of cardboard on which is placed a book, and leave

the other half uncovered; place the sample in the sunlight for several days to see whether it will fade.

Material in which there is a great amount of sizing should never be selected; but remember that many kinds of cloth are starched in the finishing process, so that a starched surface does not necessarily mean that the cloth is poor. A very cheap price usually indicates a very poor material. Often on bargain counters are cheap materials that may offer a temptation to buy, but unless one has had a good deal of experience in selecting materials it is unwise to buy at the bargain counter.

Linen materials are often used for dresses, but linen wrinkles easily and, as it is expensive, is not generally used for the everyday dress. Linen cloth does not soil so quickly as cotton cloth, because the surface is smoother and does not take up the dirt so easily. Colored linen materials usually fade badly. However, we like to have dresses made of linen because of their beauty and "feel."

Besides selecting the colors that launder well, it is necessary, in selecting any dress, to choose the one that is becoming in color. There is no complexion that cannot be improved by selecting the color best suited to it. Individuals are divided into two general groups according to their complexion: (1) blondes and (2) brunettes; but there are many types of blondes and many types of brunettes. It is impossible to give any set rules in regard to the choice of color because of the difference in types and because color affects each individual differently. The color selected for the dress should depend upon the complexion, the color of the hair and eyes, the size of the person, and the occasion when the dress will be worn.

Large people should be careful not to emphasize their size by wearing bright colors, or large or conspicuous designs in materials. Bright, intense colors are usually not a wise choice for any dress, not only because they make one conspicuous, but also because they become very tiresome if the garment must be often worn. Bright colors may be used appropriately as touches here and there on a dress. Party dresses are often made of brighter colored materials than should be used for the school or street dress. Dark blues, greens, and browns, although good colors to select for wool suits and coats, wool or silk dresses, are not best to select in wash materials, because they are hard to launder. Lighter blues, greens, lavenders, pinks, buffs, and tans are colors very much used in wash dresses. Pinks should not be too vivid, as paler shades are more becoming.

To decide on the color for a dress requires thought and study of one's self. Trying the colors, by holding a piece of material of the desired color around the shoulders while standing before a mirror, may lead one to change one's mind about the color. Observe other people to learn how certain colors affect their appearance. Perhaps you have studied color in connection with your art work. The knowledge so gained can be applied in selecting the color for your clothing. Color is the first thing that attracts or repels in a costume, and should be considered first when selecting a dress.

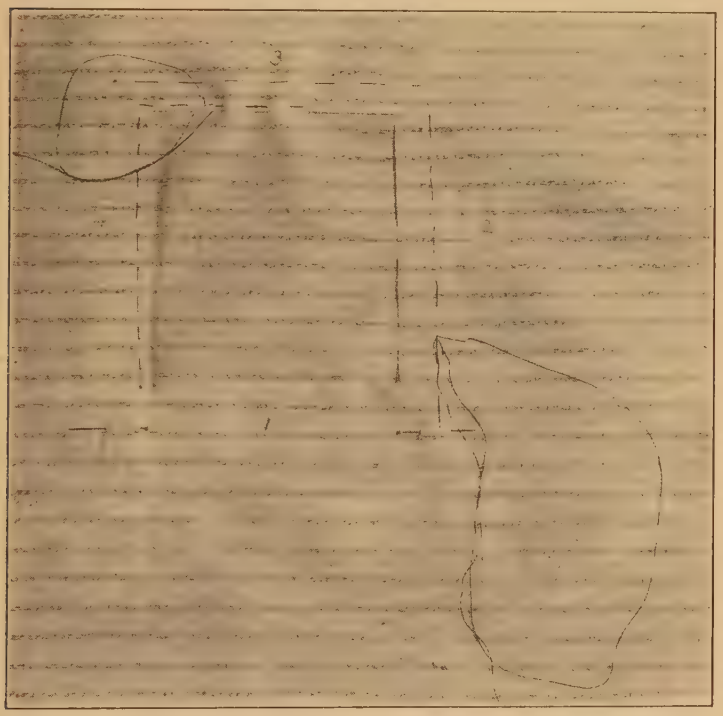
LABORATORY EXERCISES

PLANNING THE WASH DRESS

Textile study: Test samples of pink, lavender, light blue, and buff chambray to find out how they will launder, and also whether they will fade in the sun.

If possible, test colors on girls of different types before the class. Half-yard lengths of silk, wool, or cotton materials may be used to drape around the shoulders of the girl.

Select colors suitable for wash dresses to wear to school; select colors suitable for a coat; colors suitable for a party dress.



FOUR STEPS IN MAKING A HEMMED PATCH

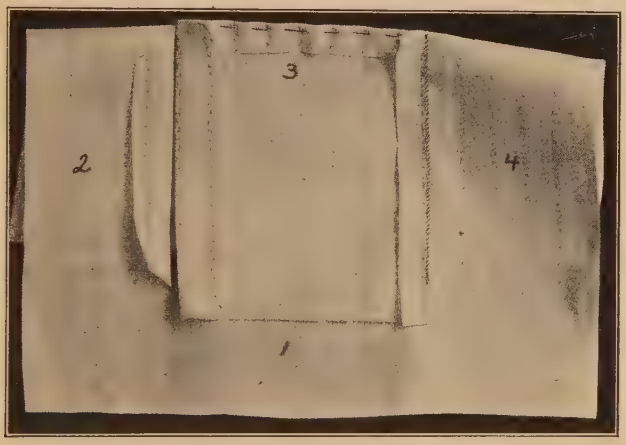
Study the pattern book and select a pattern for a one-piece dress with kimono sleeves, of a style suitable for school. Select materials that would be suitable to use for this dress. Bring samples of these to school for discussion and approval before buying material for the dress.

To make a hemmed patch: A hemmed patch is used where there will be a good deal of strain on the material and where it is not objectionable to let the stitches show. It would be used when patching such articles as a boy's trousers, or under the arm of a "teddy" or slip. The piece of cloth used for making the patch should be like the garment to be patched. Cut a square or rectangular piece of cloth for the patch, large enough to cover the hole and extend beyond the worn part, allowing one-fourth inch extra all around the piece for turning. Turn down on the wrong side one-fourth inch on all four sides of this piece. Find the middle of the patch and place this over the middle of the hole on the wrong side of the garment; pin into place, having the warp threads in the garment and in the patch parallel. If there are stripes, checks, or figures, the patch must be pinned so that they match. Baste along folded edge of patch; hem by hand.

Turn garment to right side and cut around the edges of the hole until it is square or rectangular in shape, making the edges of the hole at an equal distance from the folded edge of the patch. At each corner of the hole make a one-fourth-inch cut on the diagonal of the cloth. Turn the edge of the hole down one-fourth inch on to the patch, making the corners square. Baste along fold; hem by hand. Remove all bastings.

To make an overhand patch: This patch is used where there will be little strain on the material, and where it would be objectionable to have the stitches show. A hole in the skirt of a wash dress or in a waist may be mended with this patch. Cut the hole square or rectangular in shape; make a slanting cut at each corner, as you did in the hemmed patch. Turn under this edge all around the hole one-fourth inch. Measure the length of the sides of the hole. Cut the patch one half inch longer each way than the size of the hole, making the design in the material match before cutting. Turn the edge of this patch down one-fourth inch all around toward the wrong side. Lay the folded edge of one side of the patch to the folded edge of

one side of the hole, with the right sides together. Match the design carefully, or in plain material be sure that the warp threads of the patch and garment are parallel. Baste the folded edges together so that they can be overhanded. Overhand along the folded edges. Remove bastings.



FOUR STEPS IN MAKING AN OVERHAND PATCH

Repeat the process on each edge of the square. When it is finished, cut off a tiny triangle of cloth at each corner of the piece used for the patch, so that the fullness is removed. Overcast each edge of the patch and each edge of the hole separately. This patch, when well done, scarcely shows on the right side.

REVIEW QUESTIONS

1. What four points should be considered when selecting a wash-dress material?
2. How may wash materials be tested?
3. When is it wise to purchase "bargains"?
4. What are the advantages and disadvantages of linen material for dresses?
5. How should colors for a dress be selected?
6. What colors are good for suits or coats?
7. How should very bright colors be used?
8. Is color in dress important? Why?

GINGHAMS AND PRINTS

One very good material from which to make a wash dress is gingham. Gingham is a cotton fabric which needs especial study because it is used in such large quantity in this country. There are several kinds of gingham.

Apron gingham is a coarse material made of rather heavy threads woven together somewhat loosely. It shrinks when washed. It is used for making aprons and sometimes for house dresses.

Domestic ginghams are a cheap grade of gingham, usually woven of coarse yarns, and are harsh to the touch when crushed in the hand. These are often used for dresses or for aprons. They are very similar to apron gingham and about the same in price.

French gingham is made of even, smooth yarns, firmly woven together. It does not shrink when washed and wears extremely well. French gingham is used for making dresses. It has a smooth finish that is very beautiful, and the cloth is soft when crushed in the hand. It is much more expensive than either apron or domestic ginghams.

Zephyr ginghams are made of very fine yarns and are thinner than other ginghams. They always have heavy threads running through them, making cords or ribs. They are usually made in stripes or plaids. They are used for dresses.

Madras gingham is a rather heavy cloth used for men's shirts and women's tailored waists.

Kindergarten gingham or cloth is a roughly woven, rather heavy material, used for children's rompers. It wears well and is a kind of gingham that has become very popular.

Scotch ginghams are very fine quality ginghams usu-

ally made in plaid designs — the designs being copies of the Scotch Highlanders' plaids, thereby giving the cloth its name. It is an expensive gingham, used for dresses.

Chambray is a gingham that is always woven with a colored warp and a white woof. It is never woven in designs, but has the appearance of a plain color. It is used for dresses and aprons.

All gingham is colored alike on both sides. This is because the yarn is dyed before the cloth is woven. When cloth is dyed in this way it holds its color. This is why gingham usually launders well.

Gingham is woven with a plain weave, that is, over one thread, under one thread, over and under across the cloth. The next row is woven over the thread that was under in the first row, and under the thread that was over, and so on across the cloth. The third row is made like the first row.

Most girls wear gingham dresses, and it is well to know the different kinds that may be purchased.

"Prints" are a class of printed cotton materials much used for dresses. Fine percales, such as French percale, and other novelty materials fall into this class of fabrics. Some of these are finished like sateen, while others are like percale. A well made print wears and launders satisfactorily.

HOME PROBLEMS AND QUESTIONS

How many kinds of gingham scraps can you find at home? Keep them for the Textile Book. What is the price per yard of the following ginghams: Domestic, Apron, Chambray, and Madras? Do your local stores carry French ginghams? If so, what is the price?

Can you find some samples of materials which can be classified as "prints"? Compare the prices of these with the prices of ginghams.

LABORATORY EXERCISES

PLANNING THE WASH DRESS (*Continued*)

To make a pair of bloomers to wear with the dress: Bloomers may be of the same material as the dress, or may be made of sateen or of a closely woven material like muslin. The bloomers must be long enough in the crotch. Before using any bloomer pattern it is well to measure a pair of bloomers that you have worn and know to be comfortable, to see whether the length in the crotch is the same on the pattern.

The seams in the bloomers may be either French or felled seams. Which would make the stronger garment? A casing for one-half-inch elastic may be used at the waistline of the bloomers (see Making Pajamas, page 325).

There are two ways to finish the bottom of the legs: (1) with a casing in which one-half-inch elastic is used; (2) with a band made to fit comfortably around the leg. Follow the directions given on the pattern for cutting the bands and making the opening at the side of the leg, or follow directions given below for putting on a band. How will you finish the placket-opening at the side of the leg?

To put on a band: Gather the material, running the gathering thread one-fourth inch from the edge. Find the middle of the band and the middle of the gathered material and pin these together with the raw edges of the band and the material even, placing the right side of the band against the right side of the material. Pin the ends of the gathered material to the band, placing the end of the gathered material one-fourth inch from the end of the band. Pull the gathers in place and baste as directed in making the underslip. Stitch by machine.

Turn the ends of the band towards the wrong side of the band; fold the edge of the band in one-fourth inch. Turn

the folded edge down over the gathers so that the fold just covers the gathering stitches. Pin into place carefully. Baste the open ends of the band together, making sure that the folded edges are even and the corners square; baste the folded edge down over the gathers so that the gathers are just hidden. Overhand together the ends of the band; hem the folded edge to the gathers by hand, being careful not to let the stitches show on the right side of the band. On the bloomers the band is fastened with a button and buttonhole.

The bloomers may be finished with bands at the waistline so that they may be buttoned to an underwaist. Ask your mother to tell you how long and wide to make each band and where the buttonholes are to be placed. How will you finish the placket-openings at the sides?

REVIEW QUESTIONS

1. Name the kinds of gingham mentioned in the lesson. Describe each.
2. Which of them are used for dresses? For aprons? For children's clothes?
3. Why does gingham hold its color well?
4. In what designs is gingham made?
5. What kind of weave is used in making gingham?
6. What is the price of the cheaper ginghams? Of the more expensive?
7. Is all gingham of the same width?
8. How will a knowledge of ginghams be of value to us?
9. What is the reason for calling certain materials "prints"?

THE BECOMING DRESS

Clothing is worn for protection, for modesty, and for adornment. Clothing has power to make one look ridiculous, undignified, and conspicuous, or it may make one appear dignified, attractive, and perhaps beautiful. Clothing also has the power to make one feel comfortable and at ease, or self-conscious and ill at ease.

A really well dressed person never wears conspicuous clothing. When one looks at a well dressed person it is the person herself and not the dress that first attracts attention. The clothing worn should be so selected that it sets off any good points about the face or figure and covers up defects.

Young girls do not need much decoration on their clothing. No one should follow the "latest style" unless it is becoming. In any season there are styles that can be selected which are becoming and are often much more beautiful than the extreme styles. Besides selecting a suitable color for the dress, one must select a becoming color for the hat and wrap, and all three garments must harmonize with each other. A coat of pronounced color, such as bright red or bright green, is not the best selection if it must be worn with dresses of different colors, because some of the dresses will not harmonize with the color of the coat. A street coat of pronounced color is never a good choice when the garment must be worn more than one season, because it is usually very much "out of style" the second season.

Besides selecting the proper color for clothing, it is necessary to select the right design in the material. Very large, brightly colored designs in cloth should not be selected by one who is large in size. Bright plaids are not a wise selection for the stout person; neither are wide stripes a good choice. Narrow stripes may be used, provided there is not too much contrast in the color and width of the stripes. Plain colors, when of the right shade, are often the best selection for the stout person; very small, inconspicuous designs in the material may, however, be used. A glossy surface on cloth like satin always makes one appear larger if used for an entire garment. Tall thin people can often improve

their appearance by wearing materials designed in large plaids or, perhaps, in large figures of the right colors.

The structural lines of a dress have much to do also with the effect on the figure. The stout or short person should emphasize the vertical, or up-and-down line, of the costume. This may be done by having unbroken lines of trimming down the length of the dress; by using narrow belts that are of the same material as the dress; by avoiding the use of wide belts, or of deep yokes; by never using bands of trimming or tucks running in horizontal lines, and by avoiding ruffles. The dress must not be extremely tight, nor should it hang too loosely, as either arrangement makes one look larger.

The tall thin person needs to emphasize the horizontal line in her costume, being careful not to bring out, with the lines, the objectionable angles.

Never choose the dress pattern because it is in style unless the structural lines are adapted to the figure.

Hats must suit the lines of the face.

The only way to learn how to select the well designed costume is to study one's self carefully, remembering that the selection of the right color is very important, and that structural lines may do much to improve one's appearance.

HOME PROBLEMS AND QUESTIONS

Find in the fashion books designs for dresses: (1) emphasizing vertical lines, and (2) emphasizing horizontal lines. Bring the designs to class for discussion. Cut out and mount them in "The Clothing Book"; state under each design what lines are emphasized and how it is done.

LABORATORY EXERCISES

MAKING THE WASH DRESS

Study the pattern to be used for the dress. How should it be laid on the material to be most economical of cloth?

Does the length of the pattern need changing? How will you do this?

Pin all the pieces of the pattern to the material. Cut out the dress. Follow the directions for making which are given on the pattern. Gingham and print dresses are usually made with plain seams. All basting and fitting must be done carefully. The dress should be straightened around the bottom before hemming. How did you do this on the underslip?

REVIEW QUESTIONS

1. For what purposes is clothing worn?
2. What effect does clothing have on one's appearance?
3. What kind of clothing does the well dressed person select?
4. What designs in material are suitable for the large person to wear?
5. Do you think the person of average size has much difficulty in selecting becoming clothing?
6. What kind of structural lines should be used in the costume of a stout person? Of a tall thin person?
7. In what ways are these structural lines emphasized?
8. How can one decide about the type of clothing one should wear?

APPROPRIATE CLOTHING

A girl is well dressed if she has selected clothing that is appropriate to the occasion when it is to be worn, that is suitable for her circumstances, that is correctly designed, and is made of materials suitable for her age.

Dresses and hats decorated with much trimming are not suitable for a schoolgirl at any time. Velvet and satin are materials which are unsuitable for a young

girl to wear. Simple silk dresses may be worn for "dress-up" occasions, provided they are suitable to the community in which the girl lives. A girl never looks appropriately dressed when she wears clothing that may make her companions feel uncomfortable because it is more expensive than that which they are wearing. The girl who selects for her Commencement dress one that is much more elaborate than that of any other girl in the class does not look appropriately dressed. Many schools now adopt the plan of having the entire class wear the same type of clothing in order to avoid just such ill feeling as may be caused by the girl who is not kind enough to consider her companions. Girls graduating from the eighth grade should wear for Commencement simply made white wash dresses with black or white low-heeled pumps or shoes; never satin or silk dresses, with French-heeled slippers, gloves, and hats!

Simple wash dresses, or simply made wool dresses, are appropriate selections for school. The dress worn by the business girl should be plain and designed to give perfect freedom for doing her work. The wash dress is most appropriate for kitchen wear. A housekeeper looks very badly dressed when she wears soiled, partly worn, wool or silk dresses in the kitchen, or when she goes about her work with her hair uncombed.

Waists, dresses, or other clothing made from cheap materials, or trimmed with coarse, cheap lace and embroidery, make one appear poorly dressed. No well dressed person selects such clothing. When she cannot afford to buy the elaborate clothing made from good materials, she selects the simpler clothing of good quality and with less trimming.

When a good quality of cloth is selected for a dress, use trimmings that are of as good quality, or else go

without trimming. Cheap pearl buttons often spoil an otherwise attractive garment. Frequently, by removing the cheap buttons when they are used as

A Page from "The Clothing Book"

trimming, or by replacing them with good pearl buttons, a garment will be greatly improved in appearance.

No matter how carefully the dress has been chosen and designed, unless the hair is properly arranged, the shoes and stockings of the right style, and the proper

amount and kind of jewelry worn, the girl does not look appropriately or well dressed. No young girl needs to curl her hair; she should never use the curling-iron on it, as this breaks and injures the hair. A girl should never use powder or paint if she wishes to look properly dressed. Shoes must be polished and stockings in good order, to look well with any dress. A girl should wear little jewelry. Nothing spoils a girl's appearance more than wearing cheap jewelry.

Every girl wishes to be well dressed, and to achieve this the clothing must be neat, made of good materials, of the proper color and design, with the right structural lines, and appropriate to the time, the place, and the circumstances. It is every woman's duty, and usually her desire, to look well dressed; therefore it is worth while for the girl in school to begin to study clothing with the thought in mind of selecting that which is appropriate for herself and which will make her unconscious of her appearance.

HOME PROBLEMS AND QUESTIONS

From the fashion book select pictures of garments which you consider proper to wear: (1) two dresses for school; (2) a coat; (3) a combination suit or slip; (4) a party dress. Find a picture of the proper kind of shoes to wear to school; of a suitable hat for school; of a suitable hat for "dress-up" occasions. Bring them to school for discussion. Cut out and mount in "The Clothing Book."

LABORATORY EXERCISES

MAKING THE WASH DRESS (*Continued*)

Continue work on the dress.

REVIEW QUESTIONS

1. When is clothing appropriate?
2. Discuss "Commencement" clothing.
3. What kind of dress is appropriate to wear to school?
4. How can a dress be spoiled with trimming?
5. Under what conditions may a beautiful dress look badly?
6. What points must a well dressed girl consider when selecting her clothing?

SOME POINTS FOR THE CONSUMER

It is estimated that the women of the United States spend for textile materials 80 to 90 per cent of the money spent each year. Many women know very little about buying textiles, which explains why there are many cheap and adulterated materials put on the market. The cheap and adulterated materials make it difficult for the woman who is a careful buyer to select good materials. We have no Pure Textile law in this country to protect us from adulterated fabrics, as the Pure Food law protects us from adulterated food. In order to buy intelligently and wisely, one must study textiles so that one may learn the quality and price of good materials.

When buying materials by the yard, several points should be considered:

1. Know exactly the amount of material needed.
2. Know the amount of money that can be spent for the material.
3. Know which are the best kinds of materials to select for the purpose and for the price to be paid.
4. Know the points that show good quality in textile materials, so that those selected shall be worth the price paid.
5. Remember always that materials good of their kind should be selected, rather than cheap quality in

the more expensive types. For example, it is better to buy a good-quality serge which costs less than a good-quality broadcloth, than to buy the cheap quality of broadcloth at the same price as the good-quality serge.

Firmly woven materials usually wear longer and hold their shape better than loosely woven materials. A garment of all-wool material holds its shape better than one made of part wool and part cotton, and when selecting materials for dresses, coats, or suits, it is wise to buy all-wool if one can afford to do so.

A soft, pliable silk is usually less likely to be weighted, and will wear better, than a heavy, stiff silk. A silk material should be firmly woven, because when loosely woven it is apt to pull out at the seams. "Bargains" in silk are usually not a wise selection, because the silk is apt to be of poor quality or has been injured in some way. Both wool and silk are expensive fibers and no one should expect to buy cheap materials made from them.

In buying ready-made garments, there are many things to be considered:

1. Is the garment made under sanitary conditions? Many undergarments, cheap waists, and dresses are made in sweat-shops that are dirty, poorly aired, and in every way an unfit place for women and girls to work. Often such garments are made in homes where conditions are not sanitary and where, perhaps, there is sickness. The girls and women in sweat-shops work long hours for low wages. Garments made under these conditions are often cheaper than those made under good conditions, but are not sanitary. The best ready-made garments are made in light, well ventilated, clean workrooms, by women and girls who receive good wages for their work. Inexpensive as well as costly garments are often made under these good conditions. Many garments made under good conditions are labeled

with the Consumers' League label. This is a printed tag, fastened to the garment, and can be used only by factories where the working conditions meet the standards of the League. Perhaps you have seen garments with this label.

2. Is the material of good quality and suitable for the garment?

3. Is the garment well made, so that the seams will hold and the trimmings not pull apart? Coarse or crooked stitching spoils the appearance of a garment. Ready-made garments, such as dresses, coats, or suits, may often be bought at a lower price when purchased "out of season." Winter garments are sold for less in January and February, and summer clothes in July and August. If one selects a garment of a style that will look well the following season, it is economy to buy "out of season."

When planning the wardrobe for any season, first look over all garments left from the previous year to see which can be mended or made over; then decide what new garments will be needed. It requires careful thought and planning to buy wisely, and whoever wishes to make the best use of her money must know many things about textiles before she can make the best selections.

HOME PROBLEMS AND QUESTIONS

Write a composition on "The Selection of Clothing" to read in class. Put this in "The Clothing Book."

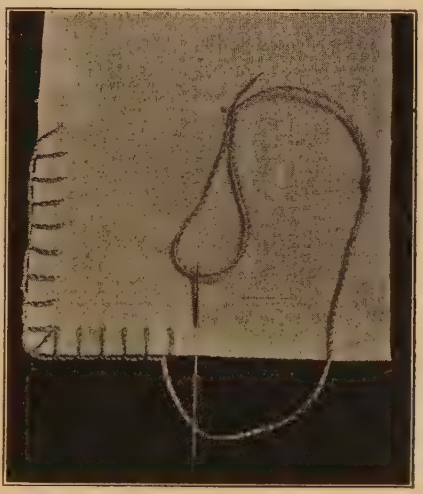
LABORATORY EXERCISES

MAKING THE WASH DRESS (*Continued*)

Collars and cuffs of a contrasting material may often be used on the wash dress. Figured materials may be used as

trimming on garments made of plain material; if the garment is of figured material use plain material for collars, cuffs, etc. With a figured material, never use braids put on in patterns.

To use the blanket-stitch on a collar: Fold a narrow hem on the edge of the collar; baste. Make the blanket-stitch over this hem, using cotton embroidery floss to match or harmonize with the color of the dress. This stitch is done from left to right, the needle and thread being placed in the position shown in the picture on this page. For the collar edge the stitches should be made close together. To fasten, run the needle through to the wrong side and take two or three small stitches over each other. The stitches may be made of different lengths, so that points are formed in the design.



METHOD OF MAKING THE BLANKET-STITCH

To use the chain-stitch on a collar: Fold a hem on the edge of the collar; baste. Hold the hem in place with chain-stitching. Chain-stitching is always done on the right side of the material. Begin with a knot. Bring the needle through from the wrong side, hiding the knot under the folded edge of the collar. Put the needle into the hole through which the thread just came, and make a stitch one-eighth inch in length, bringing the point of the needle through the loop of thread formed by bringing the thread out and putting the needle back in the same hole. Pull the loop into place, so that it is flat on the cloth but not drawn out of shape. Put the needle into the hole inside

the loop through which the thread just came, and make a stitch one-eighth inch in length, bringing the point out over the thread; draw the loop into place. Continue in this way. The material should be held so that the needle points towards the worker when each stitch is taken. Making the stitches even makes the work uniform. Chain-stitch should be made with heavy embroidery floss.

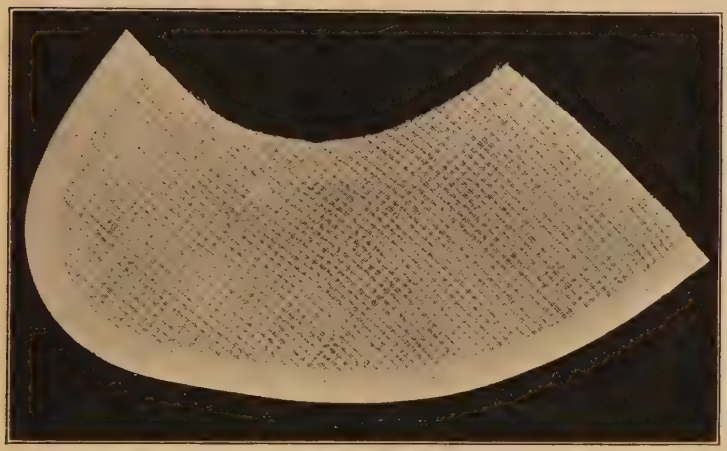
DESIGNS IN BLANKET-STITCH

THESE CAN BE USED ON THE EDGES OF COLLARS AND CUFFS

To use bias binding on a collar: Sew the bias binding or a bias strip of a material to the edge of the collar by the method used in finishing the neck of the nightgown with a bias casing. After stitching the bias binding to the edge, remove bastings. Fold the folded edge of the tape down over the stitching just made and baste so that the machine stitching does not show. Hem to the collar, with hand hemming, being careful that the stitches do not show on the right side of the collar.

To scallop the edge of the collar: Draw a design for the scallops to be used on the edge of the collar; trace on the cloth, being sure to follow the shape of the collar as given in the pattern. Make a row of running-stitches along the tracing of the scallop on both the outside and inside edge. Chain-stitch through the middle of the scallop; this is to be used as padding in order that the scallop may be rounding on top when finished. Finish the scallop by blanket-

stitching. The stitches should be made close together and so that they cover the rows of running-stitches and the chain-stitch. Use embroidery floss that is not too heavy, or the work will look coarse.



A Collar Edge Finished with a Bias Binding

REVIEW QUESTIONS

1. How much money do the women of the United States spend for textiles every year?
2. Is it as difficult to choose pure textiles as it is to choose pure food? Why?
3. What points should be remembered when buying textile materials by the yard?
4. What points must be remembered when selecting silk? Wool?
5. What is the work of the Consumers' League?
6. What points should be observed when selecting ready-made garments?
7. How may the study of textiles and clothing be a great help to the buyer?

SOME TEXTILE TESTS

Because textile materials are often adulterated, or made of poor material, it is quite necessary to know some simple tests that may be used for detecting inferior fabrics. Often, by the use of one of these tests, one may avoid buying a fabric that will not wear well, that is not true to name, that will fade or launder badly, or that will pull and stretch out of shape readily. The following tests will be of help and should be used whenever possible.

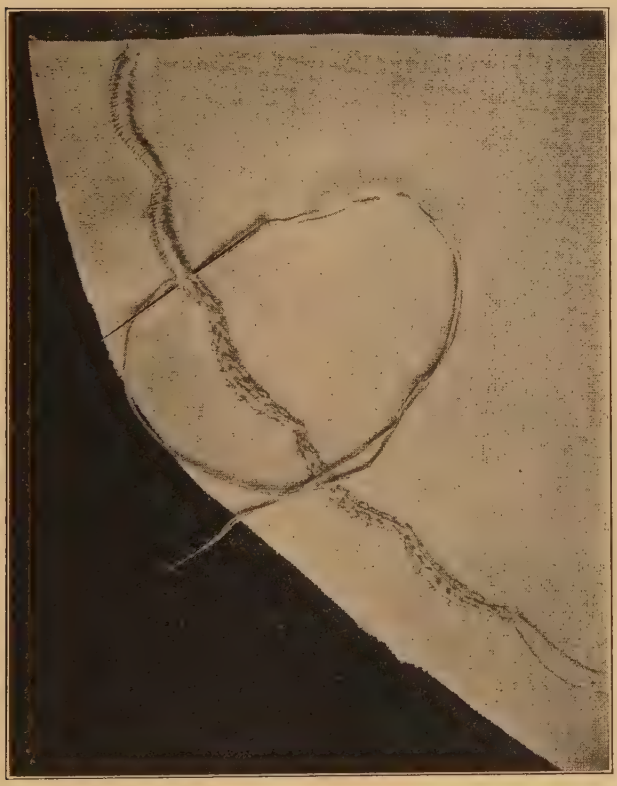
METHOD OF MAKING THE CHAIN-STITCH

A study of fibers under the microscope. The high-power microscope is very useful in telling the quality of a fabric, because each fiber has a different appearance under the microscope. By pulling apart the threads in a fabric and examining the fibers, one may tell whether the cloth is all-wool, whether it is all-linen or all-silk, and whether poor fibers have been used as substitute material. Under the microscope the fibers look as follows:

Cotton — ribbon-like, tubular fibers which are more or less twisted.

Flax — long, with cross lines at intervals, giving the appearance of joints.

Wool — a serrated surface which is easily detected.



Method of Making Embroidered Scallops on the Edge of a Collar

Silk — no markings of any kind, but the fibers appear as somewhat flattened and composed of two filaments.

Burning tests. By burning threads pulled from materials one may often judge somewhat of their

quality. Light the end of the thread and observe the odor given off and the manner in which it burns.

Cotton and linen threads burn quickly, with a flame, and little odor is apparent.

Silk and wool threads burn slowly, char, and smell like burned feathers.

Weighted silk burns very slowly and, if very heavily weighted, the form of the silk remains after burning.

Cotton Fibers Magnified

Testing the strength of fabrics. A fabric is not strong and does not wear well when it is made of a poor fiber; of weak threads in the warp and strong threads in the woof, or vice versa; or if woven poorly. Pull apart the material and test both warp and woof threads by pulling. Try tearing materials, such as muslin, long cloth, and gingham. If they tear with little effort the cloth is not so good as it should be. By holding a piece of cloth firmly with both hands and pressing down on the surface with both thumbs one may determine whether the material is firmly woven. If the threads push apart easily the material will be apt to pull out at the seams.

Tests for shrinkage. A wash material may be tested for shrinkage by first carefully measuring the length and width of the sample, then washing in warm soapsuds, rinsing, drying, and pressing; after this the sample should again be measured and the size compared with its original size.

Weighting in cloth. Cotton and linen materials may be tested for weighting in several ways:

1. Tear the cloth and observe whether a fine powder flies. This powder is weighting.

2. Scratch the surface of the cloth with the finger nail to find whether any of the weighting material can be removed.

3. Rub the cloth between the hands and observe whether the weighting will rub out of the material, leaving it less stiff and not so heavy in appearance.

Flax Fibers Magnified

4. Boil a sample in water until the sizing is removed, after which the true quality of the material may be observed. The time required for doing this will depend upon the amount of sizing present.

Silk Fibers Magnified

5. Study the cloth by holding it up to the light and looking through it. Sometimes the sizing may easily be seen.

Silk materials are weighted by adding chemicals, and the tests above do not apply. A weighted silk may be burned, a

square sample being used instead of a thread. If the silk is weighted it retains its shape after burning.

Chemical tests. Chemical tests are the most dependable in determining the quality of cloth, but many of them require a considerable equipment and a knowledge of chemistry; therefore, in testing materials at home, only a few tests can be used. The following are some very simple tests:

Wool Fibers Magnified

To determine the amount of cotton in a wool sample. Place the sample in a porcelain dish, cover with a 5 per cent solution of caustic potash (this can be purchased of the druggist), boil gently for fifteen minutes, remove what remains with a glass rod, rinse in clear water, and dry. The part of the sample left is the cotton in the material, as the wool is destroyed by the caustic potash. If nothing is left of the sample after it has been boiled, it is all-wool.

To determine the amount of cotton in a silk material. Follow directions given in the first test. The silk will be destroyed and the cotton will remain.

To determine the amount of cotton in a linen material. Pull out the warp and woof threads on two sides of the sample, so that a deep fringe is formed. Place the fringed sample in a porcelain dish; cover with a 50 per cent solution of caustic potash (obtained from the druggist), and heat for two minutes; remove sample with glass rod, dry between blotting-papers. The linen

will be dark yellow or orange in color, and the cotton white or light yellow.

This test is easily used on white flannel.

To determine whether silk is "true" or artificial. Place the sample in nitric acid, remove and observe color; true silk turns yellow, artificial silk is not affected.

LABORATORY EXERCISES

MAKING THE WASH DRESS (*Continued*)

Textile study: Make as many of the tests described above as possible.

Continue work on the dress.

What is the cost of the finished dress? Why does a ready-made dress of the same kind and quality cost more than this dress?

REVIEW QUESTIONS

1. In what ways are fabrics adulterated?
2. Describe the different fibers as they appear under the microscope.
3. Name some types of materials in which weighting is sometimes found.
4. Why do we wish to avoid buying materials that are weighted?
5. What effect does weighting have on silk?
6. In what two ways may a linen cloth be tested to find whether it is all-linen?
7. Name some materials likely to be adulterated with cotton.
8. In what ways should a gingham be tested before it is purchased for a dress?
9. In what ways should long cloth and cambric be tested?
10. How should a silk material be tested before purchasing? A wool material?
11. Does the price of a material fully indicate its value?
12. Why is it worth while, whenever possible, to test materials before purchasing?
13. With what types of dresses is it suitable to wear black sateen bloomers?
14. What kind of bloomers should be worn with a gingham dress when they are not made of the same material?

CHRISTMAS GIFTS

Gifts that can be used, or that really give pleasure to the person receiving them, are the proper ones to select. Gifts that cannot be used or enjoyed by those receiving them show either bad taste or else a lack of thought on the part of the donor. A beautiful Christmas card may give more pleasure to some persons than any other gift that could be selected. It is not the cost, but its fitness, that makes the worth-while gift.

Hand-made gifts are especially desirable, because they represent time and thought spent for the purpose of giving pleasure to those receiving the gifts. The following are simple gifts that can be made at school or at home by the members of the sewing class.

Cover-bag: *Materials* — Three and one half yards wash material, 27 to 30 inches wide; lawn, dimity, or similar materials are suitable. Thread to suit materials. Cotton embroidery floss.

Straighten the ends of the material. Fold together so that the ends are even and the right side of the material is inside. Make a plain seam one-fourth inch wide down each lengthwise edge. Turn the bag with right side out. Across each end make a hem one inch wide, and feather-stitch with the embroidery floss. Find the center point on the fold at the top of the bag. Cut out a round piece of the cloth at this center point, making the hole about the size of a dime. Use the buttonhole stitch to finish the raw edge of this hole. This hole slips over the hook on the coat-hanger.

Linen money-bag: This is a suitable gift for any one who travels.

Materials — A piece of white linen, $8\frac{1}{2}$ inches long and $4\frac{3}{4}$ inches wide. Thread to suit material. A piece of chamois five inches long and four inches wide. One yard of narrow linen tape. Two very small pearl buttons.

Make a hemstitched hem one-half inch wide across one narrow end, and a plain hem one-half inch wide across the other end. Make plain hems one-eighth inch wide down each side. Fold up the end finished with the plain hem to make a pocket $2\frac{1}{2}$ inches deep. Overhand the sides together, as in making the pincushion. The hemstitched end laps over the top of the pocket. The tape should be cut in halves. Sew one piece at each side of the fold of the lap. This is done by making a tiny hem across the end of the tape and then overhanging the fold of the hem to the pocket. Fold the chamois together and overhand at the sides to form a pocket. This slips into the linen pocket, and can be removed when the linen pocket needs washing. To fasten down the lap of the pocket, sew the buttons to the linen pocket; make two loops on the fold of the hemstitched hem that will fit over the buttons. To make a loop of thread, make three long stitches, one over the other, exactly on the fold; blanket-stitch around these threads, making the stitches very close together.

Stove-holders: *Materials* — Muslin strip, twenty-four inches long and six inches wide. Chambray strip, $12\frac{1}{2}$ inches long and $6\frac{1}{2}$ inches wide. White thread. A narrow linen tape, four inches in length.

Fold the muslin strip to four thicknesses, so that it makes a six-inch square. Baste so that the edges are kept even. Turn down the edge of the chambray one-fourth inch toward the wrong side. Baste down this fold. Cover the muslin square with this strip, placing the wrong side of the chambray next to muslin. Baste together the folded edges of the chambray on the three open sides of the holder, being careful to keep the folded edges even. This makes a holder six inches square. Stitch with machine, close to the folded edge, along all four sides of the holder. Baste together the layers of the holder so that they do not slip; make a straight line of basting diagonally across the holder each way; this is to be a guide in stitching. Stitch with machine along these lines of basting. Place the two ends of the piece of tape together; overhand the tape together

along one side for three-fourths inch, beginning at the cut ends; open flat. Turn under this cut end one-eighth inch. Fasten the tape to the corner of the holder by hemming along the edges and across the end, leaving a one-inch loop beyond the edge of the holder, so that it may be hung up easily.

REFERENCE BOOKS FOR TEACHERS

Meal Planning and Preparation

The American Home Diet by McCollum and Simmonds, published by F. C. Mathews. Detroit, Mich. $3.50

Feeding the Family by Rose, published by The Macmillan Company, New York City. $2.10

Source, Chemistry and Use of Food Products by Bailey, published by P. Blakiston's Son & Company, Philadelphia, Pa. $2.58

Nutrition and Diet by Conley, published by American Book Company, New York City. $.88

Food, What It Is and Does by Greer, published by Ginn & Company, New York City. $1.32

School and Home Cooking by Greer, published by Allyn & Bacon, Boston. $1.60

A Study of Foods by Wardall and White, published by Ginn & Company, New York City. $1.12

Dietetics for High School by Willard and Gillette, published by The Macmillan Company, New York City. $1.50

The Newer Knowledge of Nutrition by McCollum, published by The Macmillan Company, New York City. $3.80

Food Facts for Every Day by Winchell, published by J. B. Lippincott Company, Philadelphia, Pa. $.86

Food Products by Sherman, published by The Macmillan Company, New York City. $2.40

School Feeding by Bryant, published by J. B. Lippincott Company, Philadelphia, Pa. $3.00

Successful Canning and Preserving by Powell, published by J. B. Lippincott Company, Philadelphia, Pa. $2.50

Meal Planning and Table Service by Bailey and Busse, published by The Manual Arts Press, Peoria, Ill. $1.60

Food Preparation and Serving by Bailey, published by Webb Publishing Company, St. Paul, Minn. $1.50

Food Study for High Schools by Wellman, published by Little, Brown, & Company, Boston, Mass. $1.50

Food Planning and Preparation by Wellman, published by J. B. Lippincott Company, Philadelphia, Pa. $1.40

The Boston Cooking School Cook Book by Farmer, published by Little, Brown, & Company, Boston, Mass. $2.50

Clothing and Textiles

Clothing for Women by Baldt, published by J. B. Lippincott Company, Philadelphia, Pa. $2.50

Clothing and Textiles for School Girls by Baldt, published by J. B. Lippincott Company, Philadelphia, Pa.

Clothing, Choice, Care and Cost by Woolman, published by J. B. Lippincott Company, Philadelphia, Pa. $2.50

Dressmaking by Fales, published by Charles Scribner's Sons, New York City. $2.00

Sewing and Textiles by Turner, published by D. Appleton & Company, New York City. $1.75

The New Dressmaker, published by Butterick Publishing Company, New York City. $2.50

Sewing Machines by Cook, published by Manual Arts Press, Peoria, Ill. $1.25

Elements of Costume Design by Downs-O'Leary, published by Bruce Publishing Company, Milwaukee, Wis. $.90

Costume Design and Home Planning by Izor, published by Atkinson, Mentzer and Company, New York City. $1.50

Textiles and Clothing by McGowan and Waite, published by The Macmillan Company, New York City. $1.32

How the World Is Clothed by Carpenter, published by American Book Company, New York City. $.60

How We Are Clothed by Chamberlain, published by The Macmillan Company, New York City. $.88

Home Planning and Furnishing

House and Home by Gray, published by J. B. Lippincott Company, Philadelphia, Pa. $3.00

A Course in House Planning and Furnishing by Calkins, published by Scott, Foresman & Company, Chicago, Ill. $1.00

A Simple Course in Home Decorating by Fales, published by Small, Maynard & Company, Boston, Mass. $3.50

How the World Is Housed by Carpenter, published by American Book Company, New York City, $.96

How We Are Sheltered by Chamberlain, published by The Macmillan Company, New York City, $.88

The House, Its Plan, Decoration and Care by Bevier, published by American School of Home Economics, Chicago, Ill. $2.00

The House and Its Care by Matthews, published by Little, Brown, & Company, Boston, Mass. $1.50

Home Management

Housewifery by Balderston, published by J. B. Lippincott Company, Philadelphia, Pa. $2.50

Laundering by Balderston, published by J. B. Lippincott Company, Philadelphia, Pa. $2.50

Getting Your Money's Worth by Lord, published by Harcourt, Brace & Company, New York City. $1.50

Marketing and Housework Manual by Donham, published by Little, Brown, & Company, Boston. $2.00

Spending the Family Income by Donham, published by Little, Brown, & Company, Boston. $1.75

Economics of the Family by Taber and Wardall, published by J. B. Lippincott Company, Philadelphia, Pa. $1.40

Miscellaneous

Everyday Manners for Boys and Girls by Baldt, published by Laird & Lee, Chicago, Ill. $.60

Old Times in the Colonies by Coffin, published by Harper & Bros., New York City. $2.50

Home Life in Colonial Days by Earle, published by The Macmillan Company, New York City. $2.50

The Charm of a Well-Mannered House by Starrett, published by J. B. Lippincott Company, Philadelphia, Pa. $1.50

The Book of Rural Life, 10 volumes, published by The Bellows-Durham Company, Chicago, Ill. $79.50

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Meat
onion juice (small am
⅛ t salt
1 t egg
½ t fat
1 T crumbs
2 t milk

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